

Tutorial questions (P12-4A, P12-5A)

Problem 12-4A (LO12-3)

Risk Ratios

Calculations

1. Receivables turnover ratio	$\frac{\$3,086,000}{(\$70,000 + \$91,000) / 2}$	= 38.3 times
2. Average collection period	$\frac{365}{38.3}$	= 9.5 days
3. Inventory turnover ratio	$\frac{\$1,960,000}{(\$145,000 + \$115,000) / 2}$	= 15.1 times
4. Average days in inventory	$\frac{365}{15.1}$	= 24.2 days
5. Current ratio	$\frac{\$415,000}{\$104,000}$	= 4.0 to 1
6. Acid-test ratio	$\frac{\$196,000 + \$91,000}{\$104,000}$	= 2.8 to 1
7. Debt to equity ratio	$\frac{\$399,000}{\$547,000}$	= 72.9%
8. Times interest earned ratio	$\frac{\$139,000 + \$20,000 + \$58,000}{\$20,000}$	= 10.9 times

Problem 12-5A (LO12-4)

Profitability Ratios

Calculations

1. Gross profit ratio	$\frac{\$1,126,000}{\$3,086,000}$	= 36.5%
2. Return on assets	$\frac{\$139,000}{(\$794,200 + \$946,000) / 2}$	= 16.0%
3. Profit margin	$\frac{\$139,000}{\$3,086,000}$	= 4.5%
4. Asset turnover	$\frac{\$3,086,000}{(\$794,200 + \$946,000) / 2}$	= 3.5 times
5. Return on equity	$\frac{\$139,000}{(\$449,200 + \$547,000) / 2}$	= 27.9%
6. Price-earnings ratio	$\frac{\$28.30}{\$1.40}$	= 20.2

Take-home questions (E12-5, E12-6, E12-7, E12-8, RWP12-6)

Exercise 12-5 (LO12-3)

Requirement 1

<u>Risk Ratios</u>	<u>Calculations</u>	
Receivables turnover ratio	$\frac{\$19,310,000}{(\$1,100,000 + \$1,600,000) / 2}$	= 14.3 times
Average collection period	$\frac{365}{14.3}$	= 25.5 days
Inventory turnover ratio	$\frac{\$12,250,000}{(\$1,500,000 + \$2,000,000) / 2}$	= 7.0 times
Average days in inventory	$\frac{365}{7.0}$	= 52.1 days
Current ratio	$\frac{\$4,300,000}{\$1,920,000}$	= 2.2 to 1
Debt to equity ratio	$\frac{\$4,320,000}{\$4,880,000}$	= 88.5%

Requirement 2

Based on the above ratios, Adrian Express is more risky than the industry average. The receivable turnover, inventory turnover, and current ratios are close to the industry averages. However, the debt to equity ratio at 88.5% is much worse than the industry average of 50%.

Exercise 12-6 (LO12-4)

Requirement 1

<u>Profitability Ratios</u>	<u>Calculations</u>	
Gross profit ratio	$\frac{(\$19,310,000 - \$12,250,000)}{\$19,310,000}$	= 36.6%
Return on assets	$\frac{\$1,700,000}{(\$7,800,000 + \$9,200,000) / 2}$	= 20.0%
Profit margin	$\frac{\$1,700,000}{\$19,310,000}$	= 8.8%
Asset turnover	$\frac{\$19,310,000}{(\$7,800,000 + \$9,200,000) / 2}$	= 2.3 times
Return on equity	$\frac{\$1,700,000}{(\$3,540,000 + \$4,880,000) / 2}$	= 40.4%

Requirement 2

Adrian Express is less profitable than the industry average. The gross profit ratio, return on assets, profit margin, and asset turnover are all below the industry average. Return on equity of 40% is an exception, exceeding the industry average of 35%.

Exercise 12-7 (LO12-3)

Requirement 1

<u>Risk Ratios</u>	<u>Calculations</u>	
a. Receivables turnover ratio	$\frac{\$1,890,000}{(\$102,000 + \$98,000) / 2}$	= 18.9 times
b. Inventory turnover ratio	$\frac{\$1,394,250}{(\$90,000 + \$105,000) / 2}$	= 14.3 times
c. Current ratio	$\frac{\$450,000}{\$125,000}$	= 3.6 to 1
d. Acid-test ratio	$\frac{\$242,000 + \$98,000 + \$5,000}{\$125,000}$	= 2.8 to 1
e. Debt to equity ratio	$\frac{\$235,000}{\$1,157,000}$	= 20.3%

Requirement 2

One company can have a higher current ratio while the other has a higher acid-test ratio. The company may have a higher current ratio due to higher inventory and prepaid expenses. Inventory and prepaid expenses are less liquid than other current assets and therefore, are excluded in the calculation of the acid-test ratio.

Note that, for the same company, the current ratio will always be higher than the acid-test ratio. This is true because the current ratio includes all current assets in the numerator, while the acid-test ratio includes only cash, accounts receivable, and current investments.

Exercise 12-8 (LO12-4)

Requirement 1

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Profitability Ratios

Calculations

a. Gross profit ratio	$\frac{\$495,750}{\$1,890,000}$	= 26.2%
b. Return on assets	$\frac{\$184,000}{(\$1,307,000 + \$1,392,000) / 2}$	= 13.6%
c. Profit margin	$\frac{\$184,000}{\$1,890,000}$	= 9.7%
d. Asset turnover	$\frac{\$1,890,000}{(\$1,307,000 + \$1,392,000) / 2}$	= 1.4 times
e. Return on equity	$\frac{\$184,000}{(\$973,000 + \$1,157,000) / 2}$	= 17.3%

Requirement 2

One company can have a higher return on assets while the other company has a higher return on equity. The return on equity takes into consideration leverage – the amount of debt the company has assumed. The return on assets does not consider the effects of leverage.

RWP12-6

1. The debt to equity ratio would be lower.

The debt to equity ratio is the ratio of total liabilities to total equity. The warranty adjustment causes liabilities to increase and expenses to increase (and therefore equity to decrease). By not making the adjustment, the numerator (total liabilities) is lower, and the denominator (total equity) is higher. The result is the debt to equity ratio would be lower if the adjustment is not made.

The gross profit ratio would be higher.

The gross profit ratio is the ratio of gross profit to net sales. Gross profit is net sales revenue minus cost of goods sold. The inventory adjustment causes cost of goods sold to increase (and therefore gross profit to decrease) and total assets to decrease. By not making the adjustment, the numerator (gross profit) is higher, and the denominator (net sales) is unaffected. The result is the gross profit ratio would be higher if the adjustment is not made.

The profit margin would be higher.

Profit margin is the ratio of net income to net sales. The depreciation adjustment causes expenses to increase (and therefore net income to decrease) and total assets to decrease. By extending the estimated service life, the numerator (net income) is higher, and the denominator (net sales) is unaffected. The result is the profit margin would be higher if the adjustment is not made.

2. The company will appear riskier and less profitable if the adjustments are kept.

The warranty adjustment increases the debt to equity ratio, indicating greater risk. The inventory adjustment decreases the gross profit ratio, and the shorter useful life used for the depreciable asset decreases the profit margin. Both of these lower ratios indicate lower profitability.

3. Yes.

By not making the adjustments, stockholders may perceive the company as too profitable, and lenders may perceive the company as having too little risk. Management is affected by possibly now being able to receive their bonuses.

4. No.

Each of these adjustments is required and appropriate. Estimated amounts are reasonable and consistent with prior practices.