

PRACTICE CASE. ENERGY DEVICES, INC.

Energy Devices, Inc., (EDI) was a corporation that dealt in energy-saving devices. The company purchased storm windows, shower nozzles that restricted the flow of water, and other similar devices in bulk, repackaged them, and resold them. Exhibit 1 contains the company's balance sheets as of December 31, 2010 and 2011, and its income statements for 2010 and 2011.

Assignment

1. Calculate the 14 ratios summarized in Appendix A for EDI.*
2. What do the ratios tell you about EDI?
3. What additional information would you like to have about EDI to better analyze its financial statements?

* Try to set up a spreadsheet to calculate the ratios. Set it up to be as “formula driven” as possible, i.e., in such a way that you need to enter as few items as possible from the financial statements. Then use the spreadsheet for other organizations when you need to calculate ratios. If you set the spreadsheet up correctly, you should be able to calculate ratios for the next organization you analyze by copying the EDI file and entering the numbers from the new set of financial statements. All relevant ratios then should be calculated automatically by the spreadsheet formulas.

Exhibit 1. Comparative Financial Statements Balance Sheets as of December 31, 2010 and 2011 (\$000)

Assets	<u>2010</u>	<u>2011</u>
Cash	\$ 19,000	\$ 30,000
Accounts receivable	24,000	15,000
Inventory	<u>31,000</u>	<u>59,000</u>
Total current	\$ 74,000	\$104,000
Plant and equipment	\$ 48,000	\$ 72,000
Accumulated depreciation	(12,000)	(24,000)
Land	<u>20,000</u>	<u>20,000</u>
Total	\$130,000	\$172,000
Liabilities and equity		
Accounts payable	\$ 16,000	\$ 20,000
Notes payable (short-term)	<u>7,000</u>	<u>0</u>
Total current	\$ 23,000	\$ 20,000
Bonds payable	\$ 0	\$ 20,000
Contributed capital	80,000	80,000
Retained earnings	<u>27,000</u>	<u>52,000</u>
Total	\$130,000	\$172,000

Income Statements for the Years Ended December 31, 2010 and 2011 (\$000)

	<u>2010</u>	<u>2011</u>
Revenues	\$150,000	\$200,000
Less: Cost of goods sold	<u>105,000</u>	<u>130,000</u>
Gross margin	\$ 45,000	\$ 70,000
Other expenses:		
Administrative salaries	\$15,000	\$17,000
Depreciation	9,500	12,000
Other	<u>7,200</u>	<u>3,600</u>
	<u>31,700</u>	<u>32,600</u>
Income from operations	\$ 13,300	\$ 37,400
Interest expense	<u>800</u>	<u>1,900</u>
Income before tax	\$ 12,500	\$ 35,500
Income tax	<u>5,000</u>	<u>10,500</u>
Net income	\$ 7,500	\$ 25,000

Solution to the Practice Case

Question 1

Ratio calculations are contained in Exhibit A. Once a spreadsheet of this sort exists, it can be used for ratio analyses of other organizations simply by copying it and entering a new set of key financial statement figures. The ratios then will be calculated automatically.

You should attempt to set up such a spreadsheet. In doing so, you will need to determine which financial statement figures should be used for each ratio in order to arrive at the ratios shown for each year. The formulas used to calculate the ratios are contained in Exhibit B, but you should not look at these until you have completed your spreadsheet.

Question 2

The ratios tell us a great deal about EDI. First, in 2010, it had a return on assets of only 5.8%. This barely keeps pace with inflation, and allows very little room for expanding the fixed asset base. Second, the dramatic increase in ROA during 2011—up to 14.5%—came about largely as a result of the increase in profit margin, since asset turnover remained at about the same level.

In the area of liquidity, we see a marked improvement between the two years, including an impressive decline in average days receivable, from 58 to 27 days. On the other hand, average days inventory increased considerably, indicating that the organization's products sat in inventory for about two months longer ($166 - 108 = 58$ days) in 2011 than they did in 2010. This may indicate that certain items are not moving and that much of the organization's inventory is of little value.

Finally, we see that the organization has taken on additional long-term debt, increasing its leverage slightly. This is how it has financed a large portion of its new fixed assets, and how it raised its 14.5 percent ROA to an 18.9 percent ROE. Despite this increase in debt, its times-interest-earned ratio increased by about 40 percent, indicating that it is earning more than 14 times its interest payments; thus it seems to be facing relatively little risk that it will not be able to meet its debt-service obligations.

Question 3

It would be helpful to have more than two years of data so that we could see whether the changes taking place in the ratios in 2011 are part of a trend or an aberration. Finally, it would be helpful to have some figures from the industry so we could get an idea of what a reasonable current ratio would be, how long other firms keep their products in inventory, and how long clients typically take to pay their bills. Finally, it would be helpful to have some sense of management's objectives for liquidity, and its desired balance between debt and equity, so we could assess the debt/equity ratio.

Since we don't know principal payments, we must calculate the modified debt-service-coverage ratio. This ratio shows a considerable improvement in 2011 as compared to 2010, due mainly to the large increase in income. This debt service coverage has improved considerably.

ENERGY DEVICES, INC.
Exhibit A. Financial Ratios
(Dollar amounts in thousands)

		2010	2011
Key Financial			
No.	Statement Figures		
1	Cash	19,000	30,000
2	Accounts receivable	24,000	15,000
3	Inventory	31,000	59,000
4	Total current assets	74,000	104,000
5	Net fixed assets	56,000	68,000
6	Total assets	130,000	172,000
7	Total current liabilities	23,000	20,000
8	Long-term liabilities	0	20,000
9	Total liabilities	23,000	40,000
10	Total equity	107,000	132,000
11	Revenues	150,000	200,000
12	COGS	105,000	130,000
13	Depreciation	9,500	12,000
14	Interest payments	800	1,900
15	Total expenses	142,500	175,000
16	Net income	7,500	25,000
17	Principal payments	N.A.	N.A.
Ratios			
Profitability			
	Profit margin	0.050	0.125
	Return on assets	0.058	0.145
	Return on equity	0.070	0.189
Liquidity			
	Current ratio	3.22	5.20
	Quick ratio	1.87	2.25
	Ave. days receivable	58.4	27.4
Asset management			
	Asset turnover	1.15	1.16
	Fixed-asset turnover	2.68	2.94
	Ave. days inventory	107.8	165.7
Long-term solvency			
	Debt/equity	0.21	0.30
	Leverage	1.21	1.30
	Long-term debt/equity	0.00	0.15
	Debt-service coverage		
		N.A.	N.A.
	Modified debt service coverage (assumes depreciation = to principal payments)	1.72	2.80
	Times interest earned	10.38	14.16

ENERGY DEVICES, INC
Exhibit B. Financial Ratios

No.	Key Financial Statement Figures	
1	Cash	
2	Accounts receivable	
3	Inventory	
4	Total current assets	
5	Net fixed assets	
6	Total assets	
7	Total current liabilities	
8	Long-term liabilities	
9	Total liabilities	
10	Total equity	
11	Revenues	
12	COGS	
13	Depreciation	
14	Interest payments	
15	Total expenses	
16	Net income	
17	Principal payments	
	Ratios	Formula
	Profitability	(see row No.)
	Profit margin	$16 \div 11$
	Return on assets	$16 \div 6$
	Return on equity	$16 \div 10$
	Liquidity	
	Current ratio	$4 \div 7$
	Quick ratio	$(1+2) \div 7$
	Ave. days receivable	$2 \div (11 \div 365)$
	Asset management	
	Asset turnover	$11 \div 6$
	Fixed-asset turnover	$11 \div 5$
	Ave. days inventory	$3 \div (12 \div 365)$
	Long-term solvency	
	Debt/equity	$9 \div 10$
	Leverage	$6 \div 10$
	Long-term debt/equity	$8 \div 10$
	Debt-service coverage	$(16+13+14) \div (17+14)$
	Modified debt service coverage (assumes depreciation = to principal payments)	$(16+13+14) \div (13+14)$
	Times interest earned	$(16+14)/14$