PROBLEM SETS

Basic

1. What is the major difference in approach of international financial reporting standards and U.S. GAAP accounting? What are the advantages and disadvantages of each?
2. If markets are truly efficient, does it matter whether firms engage in earnings management? On the other hand, if firms manage earnings, what does that say about management's view on efficient markets?
3. What financial ratios would a credit rating agency such as Moody's or Standard & Poor's be most interested in? Which ratios would be of most interest to a stock market analyst deciding whether to buy a stock for a diversified portfolio?

Intermediate

4. The Crusty Pie Co., which specializes in apple turnovers, has a return on sales higher than the industry average, yet its ROA is the same as the industry average. How can you explain this?
5. The ABC Corporation has a profit margin on sales below the industry average, yet its ROA is above the industry average. What does this imply about its asset turnover?
6. Firm *A* and firm *B* have the same ROA, yet firm *A*'s ROE is higher. How can you explain this?
7. Use the DuPont system and the following data to find return on equity.

Leverage ratio (assets/equity)	2.2
Total asset turnover	2.0
Net profit margin	5.5%
Dividend payout ratio	31.8%

8. Recently, Galaxy Corporation lowered its allowance for doubtful accounts by reducing bad debt expense from 2% of sales to 1% of sales. Ignoring taxes, what are the immediate effects on (*a*) operating income and (*b*) operating cash flow?

KAPLAN SCHWESER

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Use the following case in answering Problems 9–11: Hatfield Industries is a large manufacturing conglomerate based in the United States with annual sales in excess of $300 million. Hatfield is currently under investigation by the Securities and Exchange Commission (SEC) for accounting irregularities and possible legal violations in the presentation of the company's financial statements. A due diligence team from the SEC has been sent to Hatfield's corporate headquarters in Philadelphia for a complete audit in order to further assess the situation.

Several unique circumstances at Hatfield are discovered by the SEC due diligence team during the course of the investigation:

- Management has been involved in ongoing negotiations with the local labor union, of which approximately 40% of its full-time labor force are members. Labor officials are seeking increased wages and pension benefits, which Hatfield's management states is not possible at this time due to decreased profitability and a tight cash flow situation. Labor officials have accused Hatfield's management of manipulating the company's financial statements to justify not granting any concessions during the course of negotiations.
- All new equipment obtained over the past several years has been established on Hatfield's books as operating leases, although past acquisitions of similar equipment were nearly always classified as capital leases. Financial statements of industry peers indicate that capital leases for this type of equipment are the norm. The SEC wants Hatfield's management to provide justification for this apparent deviation from "normal" accounting practices.
- Inventory on Hatfield's books has been steadily increasing for the past few years in comparison to sales growth. Management credits improved operating efficiencies in its production methods that have contributed to boosts in overall production. The SEC is seeking evidence that Hatfield somehow may have manipulated its inventory accounts.

The SEC due diligence team is not necessarily searching for evidence of fraud but of possible manipulation of accounting standards for the purpose of misleading shareholders and other interested

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parties. Initial review of Hatfield's financial statements indicates that at a minimum, certain practices have resulted in low-quality earnings.

9. Labor officials believe that the management of Hatfield is attempting to understate its net income to avoid making any concessions in the labor negotiations. Which of the following actions by management will *most likely* result in low-quality earnings?
   a. Lengthening the life of a depreciable asset in order to lower the depreciation expense.
   b. Lowering the discount rate used in the valuation of the company's pension obligations.
   c. The recognition of revenue at the time of delivery rather than when payment is received.
10. Hatfield has begun recording all new equipment leases on its books as operating leases, a change from its consistent past use of capital leases, in which the present value of lease payments is classified as a debt obligation. What is the *most likely* motivation behind Hatfield's change in accounting methodology? Hatfield is attempting to:
   a. Improve its leverage ratios and reduce its perceived leverage.
   b. Reduce its cost of goods sold and increase its profitability.
   c. Increase its operating margins relative to industry peers.
11. The SEC due diligence team is searching for the reason behind Hatfield's inventory build-up relative to its sales growth. One way to identify a deliberate manipulation of financial results by Hatfield is to search for:
   a. A decline in inventory turnover.
   b. Receivables that are growing faster than sales.
   c. A delay in the recognition of expenses.
12. A firm has an ROE of 3%, a debt-to-equity ratio of .5, a tax rate of 35%, and pays an interest rate of 6% on its debt. What is its operating ROA?
13. A firm has a tax burden ratio of .75, a leverage ratio of 1.25, an interest burden of .6, and a return on sales of 10%. The firm generates $2.40 in sales per dollar of assets. What is the firm's ROE?
14. Use the following cash flow data for Rocket Transport to find Rocket's
   a. Net cash provided by or used in investing activities.
   b. Net cash provided by or used in financing activities.
   c. Net increase or decrease in cash for the year.

Cash dividend	$ 80,000
Purchase of bus	$ 33,000
Interest paid on debt	$ 25,000
Sales of old equipment	$ 72,000
Repurchase of stock	$ 55,000
Cash payments to suppliers	$ 95,000
Cash collections from customers	$300,000

15. Here are data on two firms.

	Equity ($ million)	Debt ($ million)	ROC (%)	Cost of Capital (%)
Acme	100	50	17%	9%
Apex	450	150	15%	10%

   a. Which firm has the higher economic value added?
   b. Which has the higher economic value added per dollar of invested capital?

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	2009	2010	2011	2012	2013
Income Statement Summary					
Sales	$1,306	$1,654	$1,799	$2,010	$1,793
Earnings before interest and taxes (EBIT)	$ 120	$ 230	$ 221	$ 304	$ 145
Interest expense (net)	(13)	(36)	(7)	(12)	(8)
Income before taxes	$ 107	$ 194	$ 214	$ 292	$ 137
Income taxes	(44)	(75)	(79)	(99)	(46)
Tax rate	41%	39%	37%	34%	34%
Net income	$ 63	$ 119	$ 135	$ 193	$ 91
Common shares outstanding (millions)	38	38	38	38	38
Balance Sheet Summary					
Current assets	$ 487	$ 504	$ 536	$ 654	$ 509
Timberland assets	512	513	508	513	518
Property, plant, and equipment	648	681	718	827	1,037
Other assets	141	151	34	38	40
Total assets	$1,788	$1,849	$1,796	$2,032	$2,104
Current liabilities	$ 185	$ 176	$ 162	$ 180	$ 195
Long-term debt	536	493	370	530	589
Deferred taxes	123	136	127	146	153
Equity	944	1,044	1,137	1,176	1,167
Total liabilities and equity	$1,788	$1,849	$1,796	$2,032	$2,104

Table 19D

Southampton Corporation ($ million, except shares outstanding)

8. Mulroney previously calculated a valuation for Southampton for both the constant-growth and two-stage DDM as shown below:

Constant-Growth Approach	Two-Stage Approach
$29	$35.50

Using only the information provided and your answers to CFA Problems 5–7, select the stock (EO or SHC) that Mulroney should recommend as the better value, and justify your selection.

9. In reviewing the financial statements of the Graceland Rock Company, you note that net income increased while cash flow from operations decreased from 2013 to 2014.
   a. Explain how net income could increase for Graceland Rock Company while cash flow from operations decreased. Give some illustrative examples.
   b. Explain why cash flow from operations may be a good indicator of a firm's "quality of earnings."

10. A firm has net sales of $3,000, cash expenses (including taxes) of $1,400, and depreciation of $500. If accounts receivable increase over the period by $400, what would be cash flow from operations?

11. A company's current ratio is 2.0. Suppose the company uses cash to retire notes payable due within 1 year. What would be the effect on the current ratio and asset turnover ratio?

12. Jones Group has been generating stable after-tax return on equity (ROE) despite declining operating income. Explain how it might be able to maintain its stable after-tax ROE.

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	2009	2010	2011	2012	2013	2014	5-Year Average (2010–2014)
Eastover Company							
Earnings per share	$ 1.27	$ 2.12	$ 2.68	$ 1.56	$ 1.87	$ 0.90	
Dividends per share	0.87	0.90	1.15	1.20	1.20	1.20	
Book value per share	14.82	16.54	18.14	18.55	19.21	17.21	
Stock price							
High	28	40	30	33	28	30	
Low	20	20	23	25	18	20	
Close	25	26	25	28	22	27	
Average P/E	18.9	14.2	9.9	18.6	12.3	27.8	
Average P/B	1.6	1.8	1.5	1.6	1.2	1.5	
Southampton Corporation							
Earnings per share	$ 1.66	$ 3.13	$ 3.55	$ 5.08	$ 2.46	$ 1.75	
Dividends per share	0.77	0.79	0.89	0.98	1.04	1.08	
Book value per share	24.84	27.47	29.92	30.95	31.54	32.21	
Stock price							
High	34	40	38	43	45	46	
Low	21	22	26	28	20	26	
Close	31	27	28	39	27	44	
Average P/E	16.6	9.9	9.0	7.0	13.2	20.6	
Average P/B	1.1	1.1	1.1	1.2	1.0	1.1	
S&P 500							
Average P/E	15.8	16.0	11.1	13.9	15.6	19.2	15.2
Average P/B	1.8	2.1	1.9	2.2	2.1	2.3	2.1

Table 19E

Valuation of Eastover Company and Southampton Corporation compared to S&P 500

	Current Share Price	Current Dividends Per Share	2015 EPS Estimate	Current Book Value Per Share
Eastover	$ 28	$ 1.20	$ 1.60	$ 17.32
Southampton	48	1.08	3.00	32.21
S&P 500	1660	48.00	82.16	639.32

Table 19F

Current information

	Next 3 Years (2015, 2016, 2017)	Growth Beyond 2017
Eastover	12%	8%
Southampton	13%	7%

Table 19G

Projected growth rates as of year-end 2014

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	2010	2014
Income Statement Data		
Revenues	$542	$979
Operating income	38	76
Depreciation and amortization	3	9
Interest expense	3	0
Pretax income	32	67
Income taxes	13	37
Net income after tax	19	30
Balance Sheet Data		
Fixed assets	$ 41	$ 70
Total assets	245	291
Working capital	123	157
Total debt	16	0
Total shareholders' equity	159	220

Table 19H

Income statements and balance sheets

13. The DuPont formula defines the net return on shareholders' equity as a function of the following components:

- Operating margin.
- Asset turnover.
- Interest burden.
- Financial leverage.
- Income tax rate.

Using only the data in Table 19H:

a. Calculate each of the five components listed above for 2010 and 2014, and calculate the return on equity (ROE) for 2010 and 2014, using all of the five components.

b. Briefly discuss the impact of the changes in asset turnover and financial leverage on the change in ROE from 2010 to 2014.

E-INVESTMENTS EXERCISES

This chapter introduced the idea of economic value added (EVA) as a means to measure firm performance. A related measure is market value added (MVA), which is the difference between the market value of a firm and its book value. You can find the firms with the best such measures at **www.evadimensions.com.** You will see there that EVA leaders do not necessarily have the highest return on capital. Why not? Are the EVA leaders also the MVA leaders? Why not?

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SOLUTIONS TO CONCEPT CHECKS

1. A debt-to-equity ratio of 1 implies that Mordett will have $50 million of debt and $50 million of equity. Interest expense will be .09 × $50 million, or $4.5 million per year. Mordett's net profits and ROE over the business cycle will therefore be