

CHAPTER 2

ASSET AND LIABILITY VALUATION AND INCOME MEASUREMENT

Solutions to Questions, Exercises, and Problems, and Teaching Notes to Cases

2.1 Asset Valuation and Income Recognition. The important part of the question is that it focuses on *net* income (as opposed to *comprehensive* income). Changes in the valuation of assets generally result in an increase in shareholders' equity (to maintain the balance of the accounting equation), which is accomplished through associated effects captured as part of net income. For example, sales generate cash or receivables, which increase both assets and net income. Similarly, recognition of depreciation expense decreases both assets and net income. However, certain changes in asset valuations result in corresponding amounts being temporarily held as part of "accumulated other comprehensive income" on the balance sheet (in shareholders' equity). Such changes would be part of Approach 2 as shown in Exhibit 2.4 and discussed in the text. In these situations, asset valuations do not have to relate to the recognition of net income (although such asset valuations relate to *comprehensive* income).

2.2 Reliability versus Relevance. Reliability is an attribute of accounting information that relates to the degree of verifiability or representational faithfulness of the reported amounts; reliable asset valuations are supported by source documents, liquid market prices, or other credible evidence. There is limited room for subjectivity in these valuations. For example, reporting assets at acquisition cost provides management with fewer opportunities to bias the valuation compared to using current replacement costs or fair value inputs. Relevance describes accounting information that is timely and has the capacity to affect a user's decisions based on the information; relevant asset valuations incorporate all available information, including the acquisition cost and subsequent developments. Relevant asset valuations may or may not be subjective; the existence of subjectivity in an asset valuation does not necessarily mean the valuation will not be reliable.

Examples:

Historical cost/reliable and relevant: accounts receivable, fixed assets, and other assets with values that remain relatively stable

Historical cost/reliable but less relevant: LIFO inventory layers, acquired research and development and other intangible assets, and real estate that has appreciated

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Fair value/relevant and reliable: Marketable equity securities, commodities, and financial assets traded in liquid markets

Fair value/relevant but less reliable: Real estate valuations based on comparable analysis, internally generated intangible asset valuations, and pension plan assets invested in illiquid investments

2.3 Income Flows versus Cash Flows. The analysis below demonstrates that the change in cash for the five years as a whole is \$117,000. Subtracting the \$100,000 cash contribution by the owners equals \$17,000, which equals the amount of net income for the five years and the balance in retained earnings at the end of five years. Note that the cash outflow to purchase the machine occurs at the beginning of the first year, whereas depreciation on the machine occurs throughout the five years, and the remaining book value of the machine of \$20,000 affects computation of the gain on sale at the end of five years. Thus, the statement about the equivalence of cash flows and earnings holds for this example and in general.

Transaction or Event	Cash	Equipment	Common Stock	Net Income
Cash Contributed by Owners.....	+ \$ 100,000		+ \$ 100,000	
Purchase of Machine for Cash....	- 100,000	+ \$ 100,000		
Recognition of Rent Revenue.....	+ 125,000			+ \$
.....125,000				
Recognition of Operating				
Expenses.....	- 30,000			- 30,000
Recognition of Depreciation.....		- 80,000		- 80,000
Sale of Machine.....	+ 22,000	- 20,000		+ 2,000
Totals.....	<u>\$ 117,000</u>	<u>\$ 0</u>	<u>\$ 100,000</u>	<u>\$ 17,000</u>

2.4 Measurement of Acquisition Cost. Acquisition cost is \$240,500 (\$250,000 invoice price – \$15,000 cash discount + \$4,000 for the title + \$1,500 to paint company's name on the truck). The license fee of \$800 and the insurance of \$2,500 are not costs to prepare the truck for its intended use, but costs to operate the truck during its first year. Therefore, these latter two costs are prepayments that become expenses of the first year.

2.5 Measurement of a Monetary Asset.

Balance, January 1, 2009: \$10 million x 9.81815 (Part a.).....	\$ 98,181,500
Interest for 2009: .08 x \$98,181,500.....	7,854,520
Less Cash Received.....	<u>(10,000,000)</u>
Balance, December 31, 2009 (Part b.).....	\$ 96,036,020
Interest for 2010: .08 x \$96,036,020.....	7,682,882
Less Cash Received.....	<u>(10,000,000)</u>

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Balance, December 31, 2010 (Part c.)..... \$ 93,718,902

2.6 Fair Value Measurements.

- a. The stocks are Level 1 assets, assuming they are for public companies for which the prices of each share are available via closing quotes from one of the major exchanges.
- b. Bonds are also likely Level 1 assets if they are publicly traded; however, if they are privately placed issues, they would be Level 2 assets because their values would be determined by reliable inputs such as market interest rates and yield curves.
- c. Real estate is more likely comprised of Level 2 assets, given ready availability of real estate valuation data.
- d. Timber investments are either Level 2 or Level 3 assets depending on the availability of directly applicable current and future timber prices.
- e. Private equity funds are typically invested in young privately held start-up companies, and due to the illiquidity of such investments and difficulty in obtaining directly comparable asset prices, these would likely be Level 3 assets.
- f. Illiquid asset-backed securities are, by definition, illiquid, and although various models exist for valuing manufactured securities (such as mortgage-backed securities), the inputs are generally well-placed guesses, making such assets Level 3.

2.7 Computation of Income Tax Expense.

- | | |
|---|------------------|
| a. Taxes Currently Payable..... | \$ 50,000 |
| Plus Decrease in Deferred Tax Assets: \$42,900 – \$38,700..... | 4,200 |
| Plus Increase in Deferred Tax Liabilities: \$34,200 – \$28,600..... | <u>5,600</u> |
| Income Tax Expense..... | <u>\$ 59,800</u> |
-
- | | |
|---|------------------|
| b. Taxes Currently Payable..... | \$ 50,000 |
| Plus Decrease in Deferred Tax Assets: \$42,900 – \$38,700..... | 4,200 |
| Less Decrease in Deferred Tax Liability: \$58,600 – \$47,100..... | <u>(11,500)</u> |
| Income Tax Expense..... | <u>\$ 42,700</u> |
-
- c. In both Part a. and Part b., the value of the deferred tax asset decreased, which means that the company utilized deferred tax assets to decrease taxes owed relative to the amount expensed. However, the difference lies in the change in the deferred tax liability. In Part a., the deferred tax liability increased, which occurs when the firm has larger deductions (lower income) on its tax return relative to amounts expensed (amounts recognized in income). The advantageous treatment of these amounts leads to lower current cash outflows for taxes than amounts recognized as income tax expense. For Part b., the

situation is reversed. In Part b., the decrease in the deferred tax liability means that previous timing differences likely reversed, leading to higher cash payments required for current income tax payments relative to amounts recognized as income tax expense.

2.8 Computation of Income Tax Expense.

a. Taxes Currently Payable.....	\$ 35,000
Less Increase in Deferred Tax Assets:	
Beginning of Year: \$24,600 – \$6,400 = \$ 18,200	
End of Year: \$27,200 – \$7,200 = 20,000.....	(1,800)
Less Decrease in Deferred Tax Liabilities: \$18,900 – \$16,300.....	(2,600)
Income Tax Expense.....	<u>\$ 30,600</u>
b. Taxes Currently Payable.....	\$ 35,000
Less Increase in Deferred Tax Assets:	
Beginning of Year: \$24,600 – \$6,400 = \$ 18,200	
End of Year: \$27,200 – \$4,800 = 22,400.....	(4,200)
Less Decrease in Deferred Tax Liabilities: \$18,900 – \$16,300.....	(2,600)
Income Tax Expense.....	<u>\$ 28,200</u>

2.9 Effect of Valuation Method for Nonmonetary Asset on Balance Sheet and Income Statement.

a. Valuation of the land at acquisition until sale of land:

2009

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	–100,000					
Land	+100,000					
Land.....					100,000	
Cash.....						100,000

2010

No Entry

2011

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	+180,000					Gain on Sale of Land
Land	–100,000					+80,000

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Cash.....	180,000	
Land.....		100,000
Gain on Sale of Land.....		80,000

- b. Valuation of the land at current market value but including unrealized gains and losses in accumulated other comprehensive income until sale of land:

2009

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	-100,000					
Land	+100,000					
Land.....					100,000	
Cash.....						100,000

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
					Unrealized Holding Gain or Loss—OCI	
Land	+50,000				+50,000	
Land.....					50,000	
Unrealized Holding Gain or Loss—OCI.....						50,000

2010

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
					Unrealized Holding Gain or Loss—OCI	
Land	-30,000				-30,000	
Unrealized Holding Gain or Loss—OCI.....					30,000	
Land.....						30,000

2011

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
					Unrealized Holding Gain or Loss—OCI	
Cash	+180,000					
Land	-120,000				-20,000	
						Gain on Sale of Land
						+80,000
Cash.....					180,000	
Unrealized Holding Gain or Loss—OCI.....					20,000	
Land.....						120,000
Gain on Sale of Land.....						80,000

c. Valuation of the land at current market value and including market value changes each year in net income:

2009

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	-100,000						
Land	+100,000						

Land..... 100,000
Cash..... 100,000

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Land	+50,000						Gain on Fair Market Value of Land +50,000

Land..... 50,000
Gain on Fair Market Value of Land..... 50,000

2010

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Land	-30,000						Loss on Fair Market Value of Land -30,000

Loss on Fair Market Value of Land..... 30,000
Land..... 30,000

2011

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+180,000						Gain on Sale of Land +60,000
Land	-120,000						

Cash..... 180,000
Land..... 120,000
Gain on Sale of Land..... 60,000

d. Net income over sufficiently long time periods equals cash inflows minus cash outflows, other than cash transactions with owners. Walmart acquired the land in 2009 for \$100,000 and sold it for \$180,000 in 2011. Thus, the total effect on net income through the realization of the increase in the value of the land bought and sold is \$80,000. The three different methods of asset valuation and income measurement recognize this \$80,000 in different patterns over time, but the total is the same.

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2.10 Effect of Valuation Method for Monetary Asset on Balance Sheet and Income Statement.

- a. Valuation of the note at the present value of future cash flows using the historical market interest rate of 8 percent (Approach 1)

2011

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Note Receivable	+180,000						Gain on Sale of Land
Land	-100,000						+80,000
Note Receivable.....					180,000		
Land.....							100,000
Gain on Sale of Land.....							80,000

2012

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+100,939						Interest Revenue
Note Receivable	-86,539						14,400 ^a
Cash.....					100,939		
Interest Revenue.....							14,400 ^a
Note Receivable.....							86,539

$$^a\$14,400 = .08 \times \$180,000$$

2013

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+100,939						Interest Revenue
Note Receivable	-93,461						7,478 ^b
Cash.....					100,939		
Interest Revenue.....							7,478 ^b
Note Receivable.....							93,461

$$^b\$7,478 = .08 \times (\$180,000 - \$86,539) \text{ plus an additional } \$1 \text{ due to rounding}$$

- b. Valuation of the note at the present value of future cash flows, adjusting the note to fair value upon changes in market interest rates and including unrealized gains and losses in net income (Approach 3)

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2011

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Note Receivable	+180,000						Gain on Sale
Land	-100,000						of Land
							+80,000
Note Receivable.....					180,000		
Land.....						100,000	
Gain on Sale of Land.....						80,000	

2012

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+100,939						Interest Revenue
Note Receivable	-86,539						Loss on Note
Note Receivable	-1,699						Receivable
							+14,400 ^a
							-1,699 ^c
Cash.....					100,939		
Interest Revenue.....						14,400 ^a	
Note Receivable.....						86,539	

^a\$14,400 = .08 x \$180,000

Loss on Note Receivable.....					1,699 ^c		
Note Receivable.....						1,699	

^c\$1,699 = \$91,762 - (\$180,000 - \$86,539)

2013

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+100,939						Interest Revenue
Note Receivable	-91,762						
							9,177 ^d
Cash.....					100,939		
Interest Revenue.....						9,177 ^d	
Note Receivable.....						91,762	

^d\$9,177 = .10 x \$91,762 plus an additional \$1 due to rounding

- c. Over sufficiently long time periods, net income equals cash inflows minus cash outflows, other than cash transactions with owners. WMT receives \$101,878 net in cash from purchasing the land for \$100,000 and selling it for \$201,878 (\$100,939 x 2). Problem 2.9 indicates that net income across 2009 to 2011 includes the \$80,000 change in market value of the land as of the time of sale on December 31, 2011. The \$21,878 difference between the cash received of \$201,878 and the market value of the land on December 31, 2011, of \$180,000 is

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income for 2012 and 2013. The valuation method in Part a. uses the 8 percent interest rate applicable to this note on December 31, 2011, both to value the note and to recognize interest revenue for both years (acquisition cost valuation of the asset, Approach 1 for income recognition). The valuation method in Part b. uses the market interest rate for this note each year (8 percent for 2012 and 10 percent for 2013) to value the note and to recognize interest revenue and holding gains and losses (fair value for the asset, Approach 3 for income recognition). These two methods report the same total income but in a different pattern over time.

2.11 Effect of Valuation Method for Nonmonetary Asset on Balance Sheet and Income Statement.

- a. Assume for this part that PCU accounts for the equipment using acquisition cost adjusted for depreciation and impairment losses.

(1)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Equipment	+100,000						
Cash	-100,000						
Equipment.....					100,000		
Cash.....							100,000

(2)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Accumulated Depreciation	-25,000						
Depreciation Expense.....					25,000		
Accumulated Depreciation.....							25,000

(3)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Equipment	-15,000						
Impairment Loss.....					15,000		
Equipment.....							15,000

(4)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Accumulated Depreciation	-20,000						
Depreciation Expense.....							-20,000

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Depreciation Expense.....	20,000	
Accumulated Depreciation.....		20,000

(5)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Accumulated Depreciation	-20,000						Depreciation Expense -20,000

Depreciation Expense.....	20,000	
Accumulated Depreciation.....		20,000

(6)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+26,000						Gain on Sale of Equipment
Equipment	-85,000						+6,000
Accumulated Depreciation	+65,000						

Cash.....	26,000	
Accumulated Depreciation.....	65,000	
Equipment.....		85,000
Gain on Sale of Equipment.....		6,000

- b. Assume that PCU accounts for the equipment using current market values adjusted for depreciation and impairment losses.

(1)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Equipment	+100,000						
Cash	-100,000						

Equipment.....	100,000	
Cash.....		100,000

(2)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Accumulated Depreciation	-25,000						Depreciation Expense -25,000

Depreciation Expense.....	25,000	
Accumulated Depreciation.....		25,000

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(3)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Equipment	-15,000					Impairment Loss -15,000
					15,000	
						15,000

Impairment Loss..... 15,000
Equipment..... 15,000

(4)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Accumulated Depreciation	-20,000					Depreciation Expense -20,000
					20,000	
						20,000

Depreciation Expense..... 20,000
Accumulated Depreciation..... 20,000

(5)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Equipment	+8,000					Gain on Change in Equipment Fair Value +8,000
					8,000	
						8,000

Equipment..... 8,000
Gain on Change in Equipment Fair Value..... 8,000

(6)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Accumulated Depreciation	-24,000					Depreciation Expense -24,000
					24,000	
						24,000

Depreciation Expense..... 24,000
Accumulated Depreciation..... 24,000

(7)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Equipment	+2,000					Gain on Change in Equipment Fair Value +2,000
					2,000	
						2,000

Equipment..... 2,000
Gain on Change in Equipment Fair Value..... 2,000

(8)

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Cash	+26,000				
Accumulated Depreciation	+69,000				
Equipment	-95,000				
Cash.....				26,000	
Accumulated Depreciation.....				69,000	
Equipment.....					95,000

- c. Total expenses over sufficiently long time periods equal cash outflows, other than cash transactions with owners. The negative \$74,000 total net cash outflow for the equipment reflects the cash outflow to acquire the equipment of \$100,000 offset by the cash inflow to sell the equipment for \$26,000. When the depreciation expense, gain, and loss accounts under the retained earnings column are summed, the total also is negative \$74,000, which is the amount that reduced income related to the purchase, use, and disposition of the equipment.

2.12 Effect of Valuation Method for Monetary Asset on Balance Sheet and Income Statement.

- a. Assume that Alfa Romeo accounts for this note throughout the three years using its initial present value.

(1)

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Automobile Inventory	+30,000				
Cash	-30,000				
Automobile Inventory.....				30,000	
Cash.....					30,000

(2)

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Cash	+5,000				Sales +45,000
Note Receivable	+40,000				Cost of Goods Sold -30,000
Automobile Inventory	-30,000				

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Cash.....	5,000	
Note Receivable.....	40,000	
Sales.....		45,000
Cost of Goods Sold.....	30,000	
Automobile Inventory.....		30,000

(3)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+14,414						
Note Receivable	-12,814 ^b						Interest Revenue +1,600 ^a
Cash.....					14,414		
Note Receivable.....							12,814 ^b
Interest Revenue.....							1,600 ^a

^a\$1,600 = 0.04 x \$40,000

^b\$12,814 = \$14,414 – \$1,600

(4)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+14,414						
Note Receivable	-13,327 ^d						Interest Revenue +1,087 ^c
Cash.....					14,414		
Note Receivable.....							13,327 ^d
Interest Revenue.....							1,087 ^c

^c\$1,087 = .04 x (\$40,000 – \$12,814)

^d\$13,327 = \$14,414 – \$1,087

(5)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+14,414						
Note Receivable	-13,859 ^f						Interest Revenue +555 ^e
Cash.....					14,414		
Note Receivable.....							13,859 ^f
Interest Revenue.....							555 ^e

^e\$555 = .04 x \$13,859 plus an additional \$1 due to rounding

^f\$13,859 = \$14,414 – \$555

b. Assume that Alfa Romeo values this note receivable at fair value each year.

(1)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Automobile Inventory	+30,000						
Cash	-30,000						
						30,000	
							30,000

(2)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+5,000						Sales +45,000
Note Receivable	+40,000						Cost of Goods Sold -30,000
Automobile Inventory	-30,000						
						5,000	
						40,000	
							45,000
						30,000	
							30,000

(3)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+14,414						
Note Receivable	-12,814 ^b						Interest Revenue +1,600 ^a
						14,414	
							12,814 ^b
							1,600 ^a

^a\$1,600 = .04 x \$40,000

^b\$12,814 = \$14,414 – \$1,600

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(4)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Note Receivable	-384					Loss on Decline in Fair Value of Note Receivable -384 ^c
					384 ^c	
						384

Loss on Decline in Fair Value of Note Receivable..... 384^c
Note Receivable..... 384

^c\$384 = \$26,802 – (\$40,000 – \$12,814)

(5)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	+14,414					
Note Receivable	-13,074 ^c					Interest Revenue +1,340 ^d
					14,414	
						13,074 ^c
						1,340 ^d

Cash..... 14,414
Note Receivable..... 13,074^c
Interest Revenue..... 1,340^d

^d\$1,340 = .05 x \$26,802
^c\$13,074 = \$14,414 – \$1,340

(6)

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Note Receivable	-382					Loss on Decline in Fair Value of Note Receivable -382 ^f
					382 ^f	
						382

Loss on Decline in Fair Value of Note Receivable..... 382^f
Note Receivable..... 382

^f\$382 = \$13,346 – (\$26,802 – \$13,074)

(7)

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+14,414						
Note Receivable	-13,346 ^h						Interest Revenue +1,068 ^g
						14,414	
							13,346 ^h
							1,068 ^g

$$^g\$1,068 = .08 \times \$13,346$$

$$^h\$13,346 = \$14,414 - \$1,068$$

- c. Total expenses over sufficiently long time periods equal cash inflows minus cash outflows, other than cash transactions with owners. The \$18,242 balance in retained earnings equals the cash inflows of \$48,242 (\$5,000 + \$14,414 + \$14,414 + \$14,414) minus cash outflows of \$30,000 for the cost of the automobile.
- d. In Part a., the balance sheet suffers at the end of 2010 and 2011 because the note receivable is overvalued. The overvaluation is due to the market interest rate that Alfa Romeo *ought* to be realizing on the note being higher than what the company is actually realizing. Thus, the note is worth less than its adjusted acquisition cost (that is, the initial present value minus payments). In Part b., however, the fair valuation of the note receivable on the balance sheet results in volatility of the “loss” and “interest revenue” line items, reflecting the fair value adjustments.

2.13 Deferred Tax Assets.

- a. Biosante Pharmaceuticals discloses that the amount of the net operating loss carryforwards at the end of 2008 is \$62,542,000. This amount reflects the accumulated total of taxable losses (as opposed to taxable income) that Biosante has reported on its tax returns (possibly offset by taxable income, but this seems unlikely). In future years, Biosante could offset up to \$62,542,000 of taxable income with the tax loss carryforwards, for which the company did not receive any tax benefit at the time they were reported. The amount of the deferred tax asset for these net operating loss carryforwards is \$23,609,594. This is the income tax “shield” available due to the \$62,542,000 tax loss carryforwards. The link between these two amounts is that the deferred tax asset represents the tax effect of the tax loss carryforwards. Generally, this text uses 35–40 percent as the tax effect of income and deductions. You can back into the rate that was assumed by Biosante. $\$23,609,594 / \$62,542,000 = 37.75\%$. Intuitively, for each dollar of taxable income the company might report in the future (up to \$62,542,000), it would be able to save \$0.3775 in tax because it would offset that dollar of taxable income with a dollar of its tax loss carryforwards.

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- b. The company has recorded a valuation allowance for the deferred tax asset equal to the entire amount of the deferred tax asset. What this means is that the company believes that it is “more likely than not” to use its deferred tax assets before they expire. This implies that management is not optimistic about the company’s ability to generate future taxable income.
- c. The increase in the valuation allowance was achieved by the following entry:

Income Tax Expense (28,946,363 – 21,818,084).....	7,128,279
Valuation Allowance.....	7,128,279

The income tax expense entry decreased net income; the valuation allowance entry decreased the deferred tax asset. However, note that the change in the valuation allowance exactly equals the increase in the deferred tax assets. This increase in deferred tax assets would have been achieved via a cumulative adjustment to the financial statements for the individual deferred tax assets, symbolically represented as follows:

Deferred Tax Asset (28,946,363 – 21,818,084).....	7,128,279
Income Tax Expense.....	7,128,279

As a result of the build-up of the deferred tax assets but the full reserve for this build-up, there was no impact on net income for fiscal 2008. Indeed, the company’s tax provision disclosed in the footnotes is as follows:

Taxes at U.S. Federal Statutory Rate.....	\$ (6,030,952)
State Taxes, Net of Federal Benefit.....	(568,133)
Research and Development Credits.....	(526,196)
Other, Net.....	(2,998)
Change in Valuation Allowance.....	7,128,279
Income Tax Expense.....	<u>\$ 0</u>

2.14 Interpreting Income Tax Disclosures.

- a. ABC’s income before income taxes for financial reporting exceeded taxable income because the net deferred tax liability increased between the end of 2007 and the end of 2008. Also note that total income tax expense exceeds income taxes currently payable, so ABC deferred some tax payments to later years.
- b. Income before income taxes for financial reporting exceeded taxable income because the net deferred tax liability increased between the end of 2007 and the end of 2008. In addition, total income tax expense exceeded income taxes currently payable.

- c. The deferral of tax payments in 2007 and 2008 results in an addition to net income of \$208 million and \$94 million, respectively, when cash flow from operations is computed. ABC did not pay as much income taxes as the subtraction for income tax expense in the income statement would suggest.
- d. ABC recognizes insurance expense earlier for financial reporting than for tax reporting, giving rise to a deferred tax asset for the future savings in income taxes when actual losses materialize. The decline in the deferred tax asset for self-insured benefits between the end of 2006 and the end of 2007 indicates that ABC paid out more in actual claims during 2007 than it recognized as an expense. The increase in the deferred tax asset for self-insured benefits between the end of 2007 and the end of 2008 indicates that ABC recognized more expense than it paid in actual claims during 2008.
- e. ABC recognizes these costs as expenses earlier for financial reporting than for tax reporting, giving rise to a deferred tax asset for the future income taxes savings when it sells the inventory items. The decline in the deferred tax assets for inventory between the end of 2006 and the end of 2007 suggests that inventories declined during 2007, resulting in a larger expense for tax reporting than for financial reporting. The increase in the deferred tax assets for inventory between the end of 2007 and the end of 2008 suggests that inventories increased during 2008.
- f. The deferred tax asset related to the health care obligation indicates that ABC has recognized more expenses cumulatively for financial reporting than for payments made to the health care plan. The slight increase in the deferred tax assets for postretirement health care between the end of 2006 and the end of 2007 indicates that ABC grew the number of employees, improved health care benefits, or experienced increased health care costs during 2007. The decrease in the deferred tax assets for postretirement health care between the end of 2007 and the end of 2008 suggests a decline in the number of employees, lower health care benefits, or lower health care costs. The deferred tax liability related to pension indicates that ABC has contributed larger amounts cumulatively to its pension fund than it has recognized as expenses for financial reporting. The growing amounts over time suggest that ABC has consistently grown the number of its employees or their retirement benefits each year.
- g. The deferred tax asset related to uncollectible accounts indicates that ABC recognizes losses for uncollectibles earlier for financial reporting than for tax reporting. The deferred tax asset indicates the future savings in income taxes the firm will realize when it writes off actual uncollectible accounts. The increasing amount for this deferred tax asset is consistent with growth in sales.

- h. The deferred tax liability indicates that ABC recognizes depreciation earlier for tax reporting than for financial reporting. The increasing amounts for this deferred tax liability suggest that ABC increased its capital expenditures each year and therefore had more depreciable assets in the early years of their lives, when accelerated depreciation exceeds straight-line depreciation, than it has depreciable assets in the later years of their lives, when straight-line depreciation exceeds accelerated depreciation.

2.15 Interpreting Income Tax Disclosures.

- a. In 2008, the deferred income tax provision is positive, whereas in 2007, it is negative. This shows that income before taxes exceeded taxable income in 2008, but the reverse was true for 2007.
- b. During 2008, the deferred tax liability increased from \$110 million to \$495 million. Because this increase was associated with a deferred income tax provision of \$385 million but no associated tax payment for this amount was made, this increase will appear on the statement of cash flows as a positive adjustment to net income. In 2007, the opposite is true, although the 2006 balance sheet amount of deferred tax liabilities in the footnote disclosure is not available. However, it is not needed because the components of the provision are such that the deferred provision was negative, indicating that the company reported higher taxable income in 2007 than income before taxes.
- c. The premiums collected from customers go immediately into taxable income, but they do not get reported as financial income until ratably over the period in which customers have purchased legal insurance. Thus, PPD has paid taxes on these amounts although they have not been reported as financial reporting income. In the future, when PPD recognizes the revenue currently deferred, financial reporting income will increase for these amounts; however, there will be no associated taxable income for these amounts. As a consequence, the taxes already paid on the amounts deferred represent an asset of PPD, and they are categorized appropriately as deferred tax assets on the balance sheet.
- d. The explanation for why the deferred tax effect of deferred costs shows up as a liability is complementary to the explanation for deferred revenues in Part c. above. When PPD pays costs for acquiring customers, they are able to deduct these amounts. However, when these amounts are subsequently reported as expenses for financial reporting purposes, income before taxes are reduced, yet there is no associated deduction for tax reporting purposes; thus, taxable income will be higher than income before taxes. Accordingly, these amounts represent a future tax liability and are categorized as deferred tax liabilities.

- e. Accelerated depreciation deductions, all else equal, reduce current taxable income and taxes payable. However, because total tax depreciation and financial reporting depreciation will equal over the life of an asset, in future years when straight-line depreciation exceeds accelerated depreciation, PPD will show higher taxable income relative to financial reporting income. Accordingly, the excess depreciation deductions already reported are associated with a deferred tax liability.
- f. Although the limited income tax footnote disclosures can provide only limited insight into the overall reported growth and profitability (because there are many other aspects of reported profitability than are revealed in the footnote), certain items are suggestive. For example, a buildup in deferred tax liabilities for property and equipment suggests that a company is continuing to make investments in property and equipment, which generally occurs when managers are bullish on future prospects. Similarly, a buildup in the deferred tax asset for deferred revenues would indicate that the company is generating growth in sales. For PPD, the deferred tax liability for property and equipment grew, but the deferred tax asset for deferred revenue fell in 2008. Thus, these signals are mixed. The greatest difficulty posed by deducing growth and profitability from the income tax footnote for PPD is that a large component of the deferred tax effects on its balance sheet reflects the mix of cash versus accrual mix of the business. If PPD realizes an increase in the frequency of customers paying in advance with cash relative to paying ratably, this could accompany an increase, a decrease, or a flat pattern in sales. However, what the income tax footnote *is* frequently useful for is quickly identifying accrual accounting differences from cash flows. A quick glance at PPD's tax footnote reveals that it (i) defers costs of acquiring new customers and (ii) defers revenues. Given judgment often required in such deferrals, analysts can use the tax footnote as a quick way to identify possible accounting quality issues.

2.16 Interpreting Income Tax Disclosures.

- a. Nike's income before income taxes (also referred to as book income) exceeded taxable income for 2007 because total income tax expense exceeded income taxes currently payable (that is, \$708.4 million income tax expense versus \$674.1 currently payable).
- b. Opposite 2007, the taxable income for 2008 was higher than income before taxes, made clear by the fact that income tax expense is approximately \$300 million less than income taxes currently payable (\$619.5 million versus \$920.1 million). In addition, during 2008, Nike switched from a net deferred tax liability position to a net deferred tax asset position, consistent with the company paying a substantial sum for taxes relative to amounts currently expensed.

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- c. The adjustment to net income to compute cash flow from operations will be a subtraction because the cash payment is larger than income tax expense.
- d. Nike recognizes an estimated expense or revenue reduction earlier for financial reporting than for tax reporting. The delayed reduction in taxable income gives rise to the payment of taxes in early years and a reduction in taxes in later years, resulting in a deferred tax asset in between. The increasing deferred tax assets for both sales returns and allowance for doubtful accounts indicate that Nike's sales grew each year (assuming a level mix of returns and allowances and doubtful accounts estimates).
- e. Nike recognizes deferred compensation expense earlier for financial reporting than for tax reporting, giving rise to a future tax benefit that the firm will realize when it actually pays out cash to employees in later years. The increase in the deferred tax asset for deferred compensation suggests that Nike increase the number of employees or the deferred compensation benefits.
- f. The amount of the deferred tax asset for foreign loss carryforwards increased significantly each year, suggesting that some foreign units continued to operate at a net loss. Normally, an increase in such deferred tax assets would be expected to trigger an increase in the valuation allowance as well. However, the valuation allowance decreased slightly from 2007 to 2008. This indicates Nike's greater confidence that there is a reduced probability of not being able to realize the benefits of these tax loss carryforwards, perhaps due to better prospects of future profits that can be offset by tax loss carryforwards for tax reporting purposes.
- g. Apparently, when Nike acquired Umbro, it was able to deduct a large number of these amounts currently, although for financial reporting, the company is required to recognize intangible assets. The result is that Nike faces a deferred tax liability for the amounts currently residing on the balance sheet as "expenses waiting to happen."
- h. Nike recognizes foreign-source income earlier for financial reporting than for tax reporting, thereby delaying the payment of taxes and creating a deferred tax liability in the meantime.
- i. Some of Nike's foreign units operate at a net loss, giving rise to a deferred tax asset, while other units operate at a net profit, giving rise to a deferred tax liability.

2.17 Analyzing Transactions.

a.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	+50,000			Common Stock and Paid-in- Capital +50,000		
Cash.....					50,000	
Common Stock and Paid-in-Capital.....						50,000

b.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Building	+35,000					
Cash	-5,000	Note Payable	+30,000			
Building.....					35,000	
Cash.....						5,000
Note Payable.....						30,000

c.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Inventory	+40,000	Accounts Payable	+40,000			
Inventory.....					40,000	
Accounts Payable.....						40,000

d.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Accounts Receivable	+65,000					Sales +65,000
Inventory	-30,000					Cost of Goods Sold -30,000
Accounts Receivable.....					65,000	
Sales.....						65,000
Cost of Goods Sold.....					30,000	
Inventory.....						30,000

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e.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	-15,000					Compensation Expense -15,000
		Compensation Expense.....			15,000	
		Cash.....				15,000

f.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	+45,000					
Accounts Receivable	-45,000					
		Cash.....			45,000	
		Accounts Receivable.....				45,000

g.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	-28,000	Accounts Payable -28,000				
		Accounts Payable.....			28,000	
		Cash.....				28,000

h.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Accumulated Depreciation	-7,000					Depreciation Expense -7,000
		Depreciation Expense.....			7,000	
		Accumulated Depreciation.....				7,000

i.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
		Wages Payable +4,000				Compensation Expense -4,000
		Compensation Expense.....			4,000	
		Wages Payable.....				4,000

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j.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Cash	-2,400				Interest Expense -2,400
		Interest Expense.....		2,400	
		Cash.....			2,400

k.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Cash	-1,440 ^b	Deferred Tax Liability +1,200 ^c			Income Tax Expense -2,640 ^a
		Income Tax Expense.....		2,640 ^a	
		Cash.....			1,440 ^b
		Deferred Tax Liability.....			1,200 ^c
^a Sales.....					\$ 65,000
Cost of Goods Sold.....					30,000
Compensation <i>Expense</i>					15,000
					4,000
Depreciation <i>Expense</i>					7,000
Interest <i>Expense</i>					2,400
Income before Taxes.....					\$ 6,600
					x 40%
Income Tax Expense.....					<u>\$ 2,640</u>
^b Sales.....					\$ 65,000
Cost of Goods Sold.....					30,000
Compensation <i>Deduction</i>					15,000
					4,000
Depreciation <i>Deduction</i>					10,000
Interest <i>Deduction</i>					2,400
Taxable Income.....					<u>\$ 3,600</u>
					x 40%
Current Taxes Payable.....					<u>\$ 1,440</u>

^c\$1,200 = \$2,640 – \$1,440

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2.18 Analyzing Transactions.

(1)

a.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Marketable Equity Securities	+100,000				
Cash	−100,000				
Marketable Equity Securities.....				100,000	
Cash.....					100,000

b.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Marketable Equity Securities	−10,000			Unrealized Holding Gain or Loss—OCI−10,000	
Unrealized Holding Gain or Loss—OCI.....				10,000	
Marketable Equity Securities.....					10,000

c.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Deferred Tax Asset	+4,000			Unrealized Holding Gain or Loss—OCI +4,000	
Deferred Tax Asset.....				4,000	
Unrealized Holding Gain or Loss—OCI.....					4,000

d.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Cash	+94,000			Unrealized Holding Gain or Loss—AOCI +10,000	Loss on Marketable Equity Securities −6,000
Marketable Equity Securities	−90,000				
Cash.....				94,000	
Loss on Marketable Equity Securities.....				6,000	
Unrealized Holding Gain or Loss—AOCI.....					10,000
Marketable Equity Securities.....					90,000

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e.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	+2,400				Unrealized Holding Gain or Loss—AOCI +4,000	
Deferred Tax Asset	−4,000					Income Tax Expense +2,400
					Unrealized Holding Gain or Loss—AOCI.....	4,000
					Cash.....	2,400
					Deferred Tax Asset.....	4,000
					Tax Expense.....	2,400

(2)

a.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Accounts Receivable	+500,000					Sales +500,000
					Accounts Receivable.....	500,000
					Sales.....	500,000

b.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Inventory	−400,000					Cost of Goods Sold −400,000
					Cost of Goods Sold.....	400,000
					Inventory.....	400,000

c.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Allowance for Uncollectible Accounts	−10,000					Bad Debt Expense −10,000
					Bad Debt Expense.....	10,000
					Allowance for Uncollectible Accounts.....	10,000

d.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
		Warranty Reserve +20,000				Warranty Expense −20,000
					Warranty Expense.....	20,000
					Warranty Reserve.....	20,000

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e.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Accounts Receivable –3,000					
Allowance for Uncollectible Accounts +3,000					
		Allowance for Uncollectible Accounts.....		3,000	
		Accounts Receivable.....			3,000

f.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Cash –8,000		Warranty Reserve –8,000			
		Warranty Reserve.....		8,000	
		Cash.....			8,000

g.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Cash –35,600 ^a					Income Tax Expense –28,000
Deferred Tax Asset +7,600 ^b					
		Income Tax Expense.....		28,000	
		Deferred Tax Asset.....		7,600 ^b	
		Cash.....			35,600 ^a

^a\$35,600 = .40 x (\$500,000 – \$400,000 – \$3,000 – \$8,000)

^b\$7,600 = .40 x (\$10,000 + \$20,000 – \$3,000 – \$8,000)

(3)

a.

Assets	=	Liabilities	+ Shareholders' Equity		
			CC	AOCI	RE
Bonds Investment +68,058					
Cash –68,058					
		Bond Investment.....		68,058	
		Cash.....			68,058

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b.

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Bond Investment	+5,445						Interest Revenue +5,445 ^a
			Bond Investment.....			5,445	
			Interest Revenue.....				5,445 ^a

$$^a\$5,445 = .08 \times \$68,058$$

c.

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	-2,178						Income Tax Expense -2,178
			Income Tax Expense.....			2,178	
			Cash.....				2,178

d.

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Bond Investment	+5,880						Interest Revenue +5,880 ^b
			Bond Investment.....			5,880	
			Interest Revenue.....				5,880 ^b

$$^b\$5,880 = .08 \times \$73,503$$

e.

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Cash	+2,352						Income Tax Expense -2,352
			Income Tax Expense.....			2,352	
			Cash.....				2,352

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f.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	+83,683					Gain on Sale of Bonds +4,300
Bond Investment	-79,383 ^c					

Cash.....	83,683	
Bond Investment.....		79,383 ^c
Gain on Sale of Bonds.....		4,300

$$^c\$79,383 = \$68,058 + \$5,445 + \$5,880$$

g.

Assets	=	Liabilities	+	Shareholders' Equity		
				CC	AOCI	RE
Cash	-1,720					Income Tax Expense -1,720

Income Tax Expense.....	1,720	
Cash.....		1,720

Integrative Case 2.1: Starbucks

- a. Taxable income exceeded book income before income taxes for 2007 because income taxes currently payable ($\$326.7 + \$65.3 + \$31.2 = \423.2) exceeded total income tax expense (\$383.7).
- b. The answer to Part b. is in the same spirit as for Part a. above. Also, the net deferred tax asset increased between the end of 2007 and the end of 2008, indicating that Starbucks prepaid taxes relative to book income.
- c. Starbucks will report a subtraction from net income when computing cash flow from operations for the income taxes paid in excess of the amount reported as income tax expense in the income statement. Another way to understand this adjustment is to note that the current portion of income tax expense (which reflects the cash owed for current year taxes) exceeds total income tax expense.
- d. Given Starbucks' success, it is a desirable tenant and might receive rent abatements as inducements to sign long-term leases. Rent abatements might take the form of no lease payments for the first six months of a 60-month lease, for example. For financial reporting, Starbucks records rent expense ratably over the entire 60-month period, but will pay only during the last 54 months, giving rise to a deferred tax asset (because the subsequent rent payments will be deductible).
- e. Starbucks recognizes deferred compensation expense for financial reporting earlier than it claims an income tax deduction. When Starbucks contributes cash to a retirement fund in later years, it can claim an income tax deduction. The decreasing amount for the deferred tax asset related to deferred compensation suggests that the firm is contracting in terms of number of employees and/or is decreasing the deferred compensation benefits, perhaps as a cost-cutting measure.
- f. When Starbucks collects cash from customers purchasing stored value cards, the company must report these amounts as taxable income immediately. However, because these amounts are not recognized in financial reporting income until they are tendered at stores (or deemed to have been lost), the company pays taxes on these amounts up front, which results in a deferred tax asset. The substantial increase in this deferred tax asset indicates that the amount of deferred revenue must have increased between 2007 and 2008, reflecting greater sales of stored value cards.
- g. Assuming that the deferred tax asset for net operating losses of consolidated foreign subsidiaries is included in "Other," note that this amount increased substantially from 2007 to 2008, as did the valuation allowance—the deferred tax asset. Presumably, there are restrictions on the use of such net operating losses to offset future taxes, so Starbucks' management has determined that a portion of such deferred tax assets is "more likely than not" going to be utilized.

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- h. Depreciation recognized each year and cumulatively for tax reporting exceeded depreciation recognized for financial reporting. Starbucks likely has more depreciable assets in the early years of their depreciable lives when accelerated depreciation exceeds straight-line depreciation than it has depreciable assets in the later years of their lives when straight-line depreciation exceeds accelerated depreciation. For example, the 10-K mentions, “Depreciation and amortization expenses increased primarily due to the opening of 681 new Company-operated retail stores in the last 12 months.” However, the decreasing amount of deferred tax liabilities related to depreciation-related temporary differences suggests that Starbucks has decreased its capital expenditures during 2008 as compared to 2007 and 2006. For example, the 10-K explains the decrease in revenue growth for 2008 as follows: “Revenue growth was slower than in previous years due to a combination of declining comparable store sales and a decrease in the number of net new stores opened during fiscal 2008.”

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