

CHAPTER 2

ASSET AND LIABILITY VALUATION AND INCOME RECOGNITION

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

- 2.1 Relevance versus Representational Faithfulness.** 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. Reliability is an attribute of accounting information that relates to the degree of verifiability of the reported amounts; representationally faithful 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.

Examples:

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

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

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

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

- 2.2 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

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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).

2.3 Trade-offs among Acceptable Accounting Alternatives. For the balance sheet, FIFO results in inventory that was purchased most recently before the fiscal year (or quarter) end remaining on the balance sheet. Relative to inventory purchases made earlier, those purchases are probably more closely aligned with prevailing prices at year end. As a consequence, relative to LIFO, FIFO more accurately captures the value of the inventory (close to replacement cost). For the income statement, the opposite inference is made. The income statement should pair the appropriate costs of revenues with the revenues recognized. Matching the current costs of inventory with the currently recognized revenues is accomplished with LIFO. Thus, depending on a user's perspective, either FIFO or LIFO can be the preferable accounting method.

2.4 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>

2.5 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.

2.6 Measurement of a Monetary Asset.

Balance, January 1, 2009: \$10 million \times 9.81815 (Part a)	\$ 98,181,500
Interest for 2009: $0.08 \times \$98,181,500$	7,854,520
Less Cash Received	<u>(10,000,000)</u>
Balance, December 31, 2009 (Part b)	\$ 96,036,020
Interest for 2010: $0.08 \times \$96,036,020$	7,682,882
Less Cash Received	<u>(10,000,000)</u>
Balance, December 31, 2010 (Part c)	<u>\$ 93,718,902</u>

2.7 Measurement of a Nonmonetary Asset. American Airlines amortizes the \$150 million over the five years of use. Accordingly, the acquisition cost of the landing rights is initially recognized at its historical cost of \$150 million, but then it is valued at adjusted historical cost with each annual amortization of \$30 million, which reduces the valuation ratably to a final adjusted historical cost of \$0.

2.8 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.

2.9 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>

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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.

2.10 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 = <u>20,000</u>	(1,800)
Less Decrease in Deferred Tax Liabilities: \$18,900 – \$16,300	<u>(2,600)</u>
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 = <u>22,400</u>	(4,200)
Less Decrease in Deferred Tax Liabilities: \$18,900 – \$16,300	<u>(2,600)</u>
Income Tax Expense	<u>\$ 28,200</u>

2.11 Costs to Be Included in Historical Cost Valuation.

- a. The acquisition cost of the land is \$210,000 (\$200,000 + \$7,500 + \$2,500). The costs for building permits of \$1,200 would be included in the historical cost of the restaurant building to be built.

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

- a. Valuation of the land at acquisition until sale of land: Land would be valued at acquisition cost of \$100,000 initially, and would not change through 2011. In 2011, when the building is sold for \$180,000, Walmart would recognize a gain of \$80,000 on the income statement.

2009

Land	100,000	
Cash		100,000

2010

No Entry

2011

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

The land would initially be recognized at acquisition cost of \$100,000. At the end of 2009, Walmart would remeasure the land at fair value and increase the asset by \$50,000, which would also be reflected in AOCI as “Unrealized Holding Gain or Loss,” reducing shareholders’ equity.

Land	100,000	
Cash		100,000
Land	50,000	
Unrealized Holding Gain or Loss – OCI.....		50,000

2010

Part of the end-of-year 2009 upward adjustment would be reversed to reflect the \$30,000 decline in fair value of the land. Land would be decreased by \$30,000 to \$120,000, and the “Unrealized Holding Gain or Loss” sitting in AOCI in the equity section would also be reduced by \$30,000, from \$50,000 to \$20,000.

Unrealized Holding Gain or Loss – OCI	30,000	
Land.....		30,000

2011

The fair value of the land at the end of 2011 is \$180,000 (as evidenced by the price received upon sale). We can consider this effect in two ways. First, we could view Walmart as remeasuring the land to \$180,000, which would mean that land is increased by \$60,000 and “Unrealized Holding Gain or Loss” in OCI is also increased by \$60,000, from \$20,000 to \$80,000. Then, the sale of the land would bring in \$180,000 as cash (asset) and trigger derecognition of the land (from \$180,000 to \$0), and finally, the “Unrealized Holding Gain or Loss” that resides in the holding tank of AOCI in the equity section becomes realized, so Walmart would reclassified from ‘unrealized’ to ‘realized,’ the net effect

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being that “Unrealized Holding Gain or Loss” in AOCI is reduced from \$80,000 to zero, and a “Gain on Sale of Land” would be recognized in the income statement. The second approach results in the same outcome, but views the changes in all four accounts simultaneously, with the journal entries as follows:

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

The land would initially be recognized at acquisition cost of \$100,000. At the end of 2009, Walmart would remeasure the land at fair value and increase the asset by \$50,000, which would be reflected on the income statement as “Gain on Fair Market Value of Land.”

Land	100,000	
Cash		100,000
Land	50,000	
Gain on Fair Market Value of Land		50,000

2010

Part of the end-of-year 2009 upward adjustment would be reversed to reflect the \$30,000 decline in fair value of the land. Land would be decreased by \$30,000 to \$120,000, and Walmart would recognize a “Loss on Fair Market Value of Land” in the income statement.

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

2011

The firm would realize \$180,000 of cash, derecognize the land—now valued at the 2010 fair value of \$120,000, the difference being recognized as a \$60,000 “Gain on Sale of Land.”

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.

2.13 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% (Approach 1):

2011

Walmart would recognize an asset for the Note Receivable at its then present value of \$180,000 (the cash equivalent), derecognize the land which remains recorded at historical cost of \$100,000, and realize the difference of \$80,000 as “Gain on Sale of Land.”

Note Receivable	180,000	
Land		100,000
Gain on Sale of Land		80,000

2012

Walmart would receive the cash payment of \$100,939, recognize interest revenue of \$14,400 ($0.08 \times \$180,000$), and the difference of \$86,539 would reduce the historical value of the Note Receivable.

Cash	100,939	
Interest Revenue		14,400 ^a
Note Receivable		86,539

2013

Walmart would receive the second cash payment of \$100,939, recognize interest revenue of \$7,478 [$0.08 \times (\$180,000 - \$86,539)$, + \$1 for rounding], and the difference of \$93,461 would reduce the historical value of the Note Receivable to 0.

Cash	100,939	
Interest Revenue		7,478 ^b
Note Receivable		93,461

- 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

Walmart would recognize an asset for the Note Receivable at its then present value of \$180,000 (the cash equivalent), derecognize the land which remains recorded at historical cost of \$100,000, and realize the difference of \$80,000 as “Gain on Sale of Land.”

Note Receivable	180,000	
Land		100,000
Gain on Sale of Land		80,000

2012

Walmart would receive the cash payment of \$100,939, recognize interest revenue of \$14,400 ($0.08 \times \$180,000$), and the difference of \$86,539 would reduce the historical value of the Note Receivable. In addition, Walmart would recognize a loss on the receivable commensurate with the increase in interest rate. A “Loss on Note Receivable” of \$1,699 [$\$91,762 - (\$180,000 - \$86,539)$] would be recognized, and the value of the Note Receivable would be decreased by the same amount.

Cash	100,939	
Interest Revenue		14,400 ^a
Note Receivable		86,539
Loss on Note Receivable	1,699 ^c	
Note Receivable		1,699

2013

Walmart would receive the second cash payment of \$100,939, recognize interest revenue of \$9,177 ($0.10 \times \$91,762$, plus an additional \$1 due to rounding), and the difference of \$91,762 would reduce the 2012 fair value of the Note Receivable to 0.

Cash	100,939	
Interest Revenue		9,177 ^d
Note Receivable		91,762

- c. Over sufficiently long time periods, net income equals cash inflows minus cash outflows, other than cash transactions with owners. Walmart receives \$101,878 net in cash from purchasing the land for \$100,000 and selling it for \$201,878 ($\$100,939 \times 2$). Problem 2.12 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 income for 2012 and 2013. The valuation method in Part a uses the 8% 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% for 2012 and 10% 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.

2.14 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 historical cost adjusted for depreciation and impairment losses.

(1) PCU records the equipment at historical cost of \$100,000 (and reduces cash by the same amount).

Equipment	100,000	
Cash		100,000

(2) PCU records depreciation expense of \$25,000 $[(\$100,000 - \$0)/4]$, and adjusts the historical cost of the equipment by recognizing a contra-asset, Accumulated Depreciation for the same amount. The adjusted historical cost of the equipment is now \$75,000 $(\$100,000 - \$25,000)$.

Depreciation Expense	25,000	
Accumulated Depreciation		25,000

(3) The adjusted historical cost of the equipment is reduced by \$15,000 $(\$60,000 - \$75,000)$ and an “Impairment Loss” of the same amount is recognized on the income statement.

Impairment Loss	15,000	
Equipment		15,000

(4) PCU records depreciation expense of \$20,000 $[(\$60,000 - \$0)/3]$, and adjusts the historical cost of the equipment by recognizing a contra-asset, Accumulated Depreciation for the same amount. The adjusted historical cost of the equipment is now \$40,000 $(\$100,000 - \$25,000 - \$15,000 - \$20,000)$.

Depreciation Expense	20,000	
Accumulated Depreciation		20,000

(5) Same as (4). The adjusted historical cost of the equipment is now \$20,000 (in these formulas $\$100,000 - \$25,000 - \$15,000 - \$20,000 - \$20,000$).

Depreciation Expense	20,000	
Accumulated Depreciation		20,000

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(6) PCU receives cash of \$26,000 (asset increase), derecognizes both the equipment (asset decrease of \$85,000) and accumulated depreciation (asset increase of \$65,000), and the difference of \$6,000 [$\$26,000 - (\$85,000 - \$65,000)$] is recognized on the income statement as “Gain on Sale of Equipment.”

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) PCU records the equipment at historical cost of \$100,000 (and reduces cash by the same amount).

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

(2) PCU records depreciation expense of \$25,000 [$(\$100,000 - \$0)/4$], and adjusts the historical cost of the equipment by recognizing a contra-asset, Accumulated Depreciation for the same amount. The adjusted historical cost of the equipment is now \$75,000 ($\$100,000 - \$25,000$).

Depreciation Expense	25,000	
Accumulated Depreciation		25,000

(3) The adjusted historical cost of the equipment is reduced by \$15,000 ($\$60,000 - \$75,000$) and an “Impairment Loss” of the same amount is recognized on the income statement.

Impairment Loss	15,000	
Equipment		15,000

(4) PCU records depreciation expense of \$20,000 [$(\$60,000 - \$0)/3$], and adjusts the historical cost of the equipment by recognizing a contra-asset, Accumulated Depreciation for the same amount. The adjusted historical cost of the equipment is now \$40,000 ($\$100,000 - \$25,000 - \$15,000 - \$20,000$), reflecting an equipment balance of \$85,000 ($\$100,000 - \$15,000$) and accumulated depreciation of \$45,000 ($\$25,000 + 20,000$).

Depreciation Expense	20,000	
Accumulated Depreciation		20,000

(5) PCU adjusts the historical cost of the equipment upward by \$8,000 (\$48,000 – \$40,000). A “Gain on Change in Equipment Fair Value” is recognized on the income statement.

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

(6) PCU records depreciation expense of \$24,000 $[(\$48,000 - \$0)/2]$, and adjusts the historical cost of the equipment by recognizing a contra-asset, Accumulated Depreciation for the same amount. The adjusted historical cost of the equipment is now \$24,000 (\$100,000 – \$25,000 – \$15,000 – \$20,000 + \$8,000 – \$24,000), reflecting an equipment balance of \$93,000 (\$100,000 – \$15,000 + \$8,000) and accumulated depreciation of \$69,000 (\$25,000 + 20,000 + \$24,000).

Depreciation Expense	24,000	
Accumulated Depreciation		24,000

(7) PCU adjusts the historical cost of the equipment upward by \$2,000 (\$26,000 – \$24,000). A “Gain on Change in Equipment Fair Value” is recognized on the income statement. The value of the equipment rises to \$95,000 (\$93,000 + \$2,000).

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

(8) PCU receives cash of \$26,000 (asset increase), and derecognizes both the equipment (asset decrease of \$95,000) and accumulated depreciation (asset increase of \$69,000). Because the equipment has been annually marked-to-market (i.e., fair value), there is no gain upon the sale.

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.

2.15 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) The cash costs of the automobile increases inventory (and decreases cash).

Automobile Inventory	30,000	
Cash		30,000

(2) The sale of the car triggers recognition of sales on the income statement of \$45,000, and recognition of two assets—cash of \$5,000 and a receivable of \$40,000. In addition, Automobile Inventory would be reduced for the cost of the automobile (\$30,000), and Cost of Goods Sold in the same amount would be recognized on the income statement.

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

(3) Alfa Romeo receives the first annual payment of (\$14,414), increasing cash, and recognizes interest revenue of \$1,600 ($0.04 \times \$40,000$). The difference of \$12,814 ($\$14,414 - \$1,600$) adjusts downward the value of the Note Receivable.

Cash.....	14,414	
Note Receivable		12,814 ^b
Interest Revenue		1,600 ^a

(4) Alfa Romeo receives the second annual payment of (\$14,414), increasing cash, and recognizes interest revenue of \$1,087 [$0.04 \times (\$40,000 - \$12,814)$]. The difference of \$13,327 ($\$14,414 - \$1,087$) adjusts downward the value of the Note Receivable.

Cash.....	14,414	
Note Receivable		13,327 ^d
Interest Revenue		1,087 ^c

(5) Alfa Romeo receives the final annual payment of (\$14,414), increasing cash, and recognizes interest revenue of \$555 ($0.04 \times \$13,859$, plus an additional \$1 for rounding). The difference of \$13,859 ($\$14,414 - \555) adjusts downward the value of the Note Receivable to \$0.

Cash.....	14,414	
Note Receivable		13,859 ^f
Interest Revenue		555 ^e

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

(1) Same as (1) in Part a.

Automobile Inventory	30,000	
Cash		30,000

(2) Same as (2) in Part a.

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

(3) Same as (3) in Part a.

Cash.....	14,414	
Note Receivable		12,814 ^b
Interest Revenue		1,600 ^a

(4) The rise in interest rates reduces the fair value of the Note Receivable by \$384 (\$26,802 – (\$40,000 – \$12,814)), and a “Loss on Decline in Fair Value of Note Receivable” is recognized on the income statement.

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

(5) Alfa Romeo receives the second annual payment of (\$14,414), increasing cash, and recognizes interest revenue of \$1,340 (0.05 × \$26,802). The difference of \$13,074 (\$14,414 – \$1,340) adjusts downward the value of the Note Receivable.

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

(6) The second rise in interest rates reduces the fair value of the Note Receivable by \$382 [\$13,346 – (\$26,802 – \$13,074)], and a second “Loss on Decline in Fair Value of Note Receivable” is recognized on the income statement.

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

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(7) Alfa Romeo receives the final annual payment of (\$14,414), increasing cash, and recognizes interest revenue of \$1,068 ($0.08 \times \$13,346$). The difference of \$13,346 ($\$14,414 - \$1,068$) adjusts downward the value of the Note Receivable to \$0.

Cash.....	14,414	
Note Receivable		13,346 ^h
Interest Revenue		1,068 ^g

- 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.

2.16 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% 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.
- 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 buildup of the deferred tax assets but the full reserve for this buildup, 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>

2.17 Interpreting Income Tax Disclosures.

- ABC's income before income taxes for financial reporting exceeded taxable income because the net deferred tax liability increased between the end of 2013 and the end of 2014. Also note that total income tax expense exceeds income taxes currently payable, so ABC deferred some tax payments to later years.
- Income before income taxes for financial reporting exceeded taxable income because the net deferred tax liability increased between the end of 2013 and the end of 2014. In addition, total income tax expense exceeded income taxes currently payable.
- The deferral of tax payments in 2013 and 2014 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.
- 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 2012 and the end of 2013 indicates that

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ABC paid out more in actual claims during 2013 than it recognized as an expense. The increase in the deferred tax asset for self-insured benefits between the end of 2013 and the end of 2014 indicates that ABC recognized more expense than it paid in actual claims during 2014.

- 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 2012 and the end of 2013 suggests that inventories declined during 2013, 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 2013 and the end of 2014 suggests that inventories increased during 2014.
- 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 2012 and the end of 2013 indicates that ABC grew the number of employees, improved health care benefits, or experienced increased health care costs during 2013. The decrease in the deferred tax assets for postretirement health care between the end of 2013 and the end of 2014 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.

2.18 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.

2.19 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 million 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.
- 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.

2.20 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

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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

e.

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

Compensation Expense.....	15,000	
Cash		15,000

f.

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

Cash.....	45,000	
Accounts Receivable		45,000

g.

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

Accounts Payable.....	28,000	
Cash		28,000

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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

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 Expense	15,000
	4,000
Depreciation Expense	7,000
Interest Expense	2,400
Income before Taxes	\$ 6,600
	× 40%
Income Tax Expense	<u>\$ 2,640</u>

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^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>	<u>2,400</u>
Taxable Income.....	\$ 3,600
	<u>× 40%</u>
Current Taxes Payable	<u>\$ 1,440</u>

^c\$1,200 = \$2,640 – \$1,440

2.21 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

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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						
						94,000	
						6,000	
							10,000
							90,000

e.

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

(2)

a.

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

b.

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

c.

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

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d.

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

e.

Assets		=	Liabilities	+	Shareholders' Equity		
					CC	AOCI	RE
Accounts Receivable	-3,000						
Allowance for Uncollectible Accounts	+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						7,000 ^b		
Cash							35,600 ^a	

^a\$35,600 = 0.40 × (\$500,000 – \$400,000 – \$3,000 – \$8,000)

^b\$7,600 = 0.40 × (\$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
Bonds Investment	+5,445					Interest Revenue
						+5,445 ^a

Bond Investment	5,445	
Cash		5,445 ^a

$$^a\$5,445 = 0.08 \times \$68,058$$

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

$$^b\$5,880 = 0.08 \times \$73,503$$

e.

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

Income Tax Expense	2,352	
Cash		2,352

f.

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

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

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

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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

- Book income before income taxes exceeded taxable income for 2012 because total income tax expense (\$674.4) exceeded income taxes currently payable (\$466.0 + \$79.9 + \$76.8 = \$622.7). Another way to respond is simply to note that deferred tax expense was greater than zero, indicating that the company deferred tax payments relative to the expense recognized on book income.
- Starbucks will report an addition to net income when computing cash flow from operations in an amount representing 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) is less than total income tax expense.
- 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).
- 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.
- 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. When Starbucks actually recognizes the revenue in book income, there will be no corresponding income recognized at that year's tax filings, so taxes owed will be less than tax expense on the income statement.

- f. 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 2011 to 2012, as did the valuation allowance—the deferred tax asset. The income tax footnote indicates, “During fiscal 2011, we recognized approximately \$32 million of previously unrecognized deferred tax assets in certain foreign jurisdictions, with a corresponding increase to the valuation allowance due to the uncertainty of their realization.” 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.
- g. 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. The increasing amount of deferred tax liabilities related to depreciation-related temporary differences suggests that Starbucks has increased its capital expenditures during 2012 as compared to 2011. Note: The authors attempted to obtain an explanation for the large deferred tax asset for property, plant, and equipment, but Starbucks’ Investor Relations department did not respond.

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