

CHAPTER TWO

Introduction to the Financial Statements

Concept Questions

C2.1. The change in shareholders' equity is equal earnings minus net payout to shareholders only if earnings are comprehensive earnings. See equation 2.4. Net income, calculated according to U.S. GAAP is not comprehensive because some income ("other comprehensive income") is booked as other comprehensive income outside of net income. See equation 2.5.

C2.2. False. Cash can also be paid out through share repurchases.

C2.3. True. Here are the equations:

$$\text{Shareholders equity} = \text{Assets} - \text{Liabilities} \quad (\text{equation 2.1})$$

$$\Delta \text{Shareholders equity} = \Delta \text{Assets} - \Delta \text{Liabilities} \quad (\Delta \text{ indicates a change})$$

$$\Delta \text{Shareholders equity} = \text{Comprehensive earnings} - \text{Net Payout} \quad (\text{equation 2.4})$$

This is, of course, a matter of algebra, but it means that, in recording earnings, an asset or liability must also be affected (by double entry). So, for example, if a sale is made for cash, revenue is recorded and the cash asset is increased, and cash is decreased when paying wages.

C2.4. Net income available to common is net income minus preferred dividends. The earnings per share calculation uses net income available to common (divided by shares outstanding)

C2.5. For one of two reasons:

1. The firm is mispriced in the market.
2. The firm is carrying assets on its balance sheet at less than market value, or is omitting other assets like brand assets and knowledge assets. Historical cost accounting and the immediate expensing of R&D and expenditures on brand creation produce balance sheets that are likely to be below market value.

C2.6. P/E ratios indicate growth in earnings. The numerator (price) is based on expected future earnings whereas the denominator is current earnings. If future earnings are expected to be higher than current earnings (that is, growth in earnings is expected), the P/E will be high. If future earnings are expected to be lower, the P/E ratio will be low. So differences in P/E ratios are determined by differences in growth in future earnings from the current level of earnings. P/E ratios could also differ because the market incorrectly forecasts future earnings. Chapter 6 elaborates.

C2.7. Accounting value added is comprehensive earnings that a firm reports for a period, and is equal to the change in book value plus the net dividend (net payout): see equation 2.4. Shareholder value added is the change in shareholder wealth for the period, equal to the change in the value of the investment plus the net dividend: see equation 2.7. Accounting value added is earnings from selling products to customers in the current period. Shareholder value added incorporates not only current earnings but also anticipations of future earnings not yet booked in the accounting records.

C2.8. Some examples:

- Expensing research and development expenditures.

- Using short estimated lives for depreciable assets – resulting is high depreciation charges.
- Expensing store opening costs before revenue is received.
- Not recognizing the cost of stock options.
- Expensing advertising and brand creation costs.
- Underestimating bad debts
- Not recognizing contingent warranty liabilities from sales of products.

See Box 2.4.

C2.9. Accounting methods that would explain the high P/B ratios in the 1990s:

- More of firms' assets were in intangible assets (knowledge, marketing skill, etc.) – and thus not on the balance sheet – rather than in tangible assets than are booked to the balance sheet.
- Firms became more conservative in booking tangible net assets (that is they carried them at lower amounts on the balance sheet), by recognizing more liabilities such as pension and post-employment liabilities and by carrying assets at lower amounts through restructuring charges, for example.

The other factor: stock prices rose above fundamental value, adding to the difference between price and book value.

Vb Dell halt veel value uit “ direct-to-consumer” process. Dit is niet opgenomen in de balans omdat de fair value hier heel moeilijk van de evalueren is en dit zou leiden tot speculatieve cijfers.

C2.10. Dividends are distributions of the value created in a firm; they are not a loss in generating value. So accountants calculate the value added (earnings), add it to equity, and

then treat dividends as a distribution of the value created (by charging dividends against equity in the balance sheet).

The income statement reports how shareholders' equity increased or decreased as a result of business activities. Dividends are not an expense but a distribution of value.

C2.11. Plants wear out. They rust and become obsolescent. So value in the original investment is lost. Accordingly, depreciation is an expense in generating value from operations, just as wages are.

Because of the matching principle: "Expenses are recognized in the income statement by their association with revenues for which they have been incurred." Incurring the cost of plant & equipment directly as an expense at the date of acquiring goes against the principle.

C2.12. Like depreciation of plant, appropriate amortization of intangibles is a loss of value.

Patents expire, and so the value of the original investment is lost. Goodwill paid for the purchase of another firm can decrease and so, just as the cost of plant is expensed against the revenue the plant produces, goodwill (the cost of a purchase) is expensed against the revenue from the purchase.

Yes, if this patent provides revenue over the same amount of time the right is amortized over.

C2.13. Matching nets expenses against the revenues they generate. Revenues are value added to the firm from operations; expenses are value given up in earning revenues. Matching the two gives the net value added, and so measures the success in operations. Matching uncovers profitability.

C2.13 Why do fundamental analysts want accountants to follow the reliability criterion when preparing financial reports?

Forecasts are only reliable when the reliability criterion is respected. This way the analyst has 'hard' information to base his forecasts on.

Exercises

E2.1. Finding Financial Statement Information on the Internet

This is a self-guided exercise.

E2.2. Accounting for a Savings Account

The financial statements for the first scenario are as follows:

BALANCE SHEET

Assets (cash)	<u>\$105</u>	Owners' equity	<u>\$105</u>
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INCOME STATEMENT

Revenue	\$5
Expenses	<u>0</u>
Earnings	<u>\$5</u>

STATEMENT OF CASH FLOWS

Cash from operations	\$5
Cash investment	0
Cash in financing activities:	
Dividends	<u>(0)</u>
Change in cash	<u>\$ 5</u>

STATEMENT OF OWNERS' EQUITY

Balance, end of Year 0	\$100
Earnings, Year 1	5
Dividends (withdrawals), Year 1	<u>(0)</u>
Balance, end of Year 1	<u>\$105</u>

As the \$5 in cash is not withdrawn (and not applied to another investment), cash in the account increases to \$105, and owners' equity increases to \$105. Earnings are unchanged.

The financial statements for the second scenario are as follows:

BALANCE SHEET		INCOME STATEMENT	
Assets:		Revenue	\$5
Cash	\$100	Expenses	<u>0</u>
Investment	<u>5</u>	Earnings	<u>\$5</u>
Total assets	<u>\$105</u>	Owners' equity	<u>\$105</u>

STATEMENT OF CASH FLOWS		STATEMENT OF OWNERS' EQUITY	
Cash from operations	\$5	Balance, end of Year 0	\$100
Cash investment	5	Earnings, Year 1	5
Cash in financing activities:		Dividends (withdrawals), Year 1	<u>(0)</u>
Dividends	<u>(0)</u>	Balance, end of Year 1	<u>\$105</u>
Change in cash	<u>\$ 0</u>		

The \$5 invested in the equity fund is cash flow in investing activities. After this investment (and no withdrawal), the change in cash is zero.

E2.3. Preparing an Income Statement and Statement of Shareholders' Equity

Income statement:

Sales	\$4,458
Cost of good sold	<u>3,348</u>
Gross margin	1,110
Selling expenses	(1,230)
Research and development	<u>(450)</u>
Operating income	(570)
Income taxes	<u>200</u>
Net loss	<u>(370)</u>

Note that research and developments expenses are expensed as incurred.

Equity statement:

Beginning equity, 2003		\$3,270
Net loss	\$(370)	
Other comprehensive income	<u>76</u>	(294)
Share issues		680
Common dividends		<u>(140)</u>
Ending equity, 2003		<u>\$3,516</u>

Comprehensive income (a loss of \$294) is given in the equity statement. Unrealized gains and losses on securities available for sale are treated as other comprehensive income under GAAP.

Net payout = Dividends + share repurchases – share issues

$$= 140 + 0 - 680$$

$$= - 540$$

That is, there was a net cash flow from shareholders into the firm of \$540 million.

Taxes are negative because income is negative (a loss). The firm has a tax loss that it can carry forward.

E2.4. Testing Accounting Relations: J.C. Penny Co.

This exercise tests some basic accounting relations. The student will have most difficulty with part (c)

(a) Total liabilities = Total assets – stockholders' equity

$$= 17,102 - 5884$$

$$= 11,218$$

(b) Total expenses = Total revenues – Net Income

$$= 21,419 - 838$$

$$= 20,581$$

(c) Total Equity (end) = Total Equity (beginning) + Net Income + Other Comprehensive

Income – Net Payout to Common Shareholders – Net

Payout to

Preferred Shareholders

$$5884 = 5,615 + 838 + ? - (434 + 301 - 383) - (40 + 27)$$

Other Comprehensive Income = ? = (150)

Comprehensive Income = Net Income + Other Comprehensive Income

$$= 838 - 150$$

$$= 688$$

The net payout to common is cash dividends + stock purchases – share issues. The preferred stock retirement and preferred dividends must be subtracted as the shareholders' equity numbers are for all shareholders (common plus preferred), not the common only. The other comprehensive income was unrealized gains on securities and currency translation adjustments.

E2.5. Testing Accounting Relations: Genetech Inc.

(a) Net income is given in the statement of stockholders' equity: \$181,909 thousand

Revenue = Net income + Expenses (including taxes)

$$= \$181,909 + 969,034$$

$$= \$1,150,943 \text{ thousand}$$

(b) ebit = Net income + Interest + Taxes

$$= \$181,909 + 4,552 + \$70,742$$

$$= \$257,203 \text{ thousand}$$

(c) ebitda = Net income + interest + taxes + depreciation and

amortization

$$= \$181,909 + 4,552 + 70,742 + 78,101$$

$$= \$335,304$$

Depreciation and amortization is reported as an add-back to net income to get cash flow from operations in the cash flow statement.

(d) Long-term assets = Total assets – Current assets

$$= \$2,855 - 1,242$$

$$= \$1,613 \text{ million}$$

Total Liabilities = Total assets – shareholders' equity

$$= \$2,855 - 2,344$$

$$= \$511 \text{ million}$$

Short-term Liabilities = Total liabilities – Long-term Liabilities

$$= \$511 - 220$$

$$= \$291 \text{ million}$$

(e) Change in cash and cash equivalents = Cash flow from operations – Cash used in investing activities + Cash from financing activities

$$\text{So, } \$36,693 = \$349,851 - 421,096 + ?$$

$$= \$107,938 \text{ thousand}$$

E2.6. Classifying Accounting Items

- Current asset
- Net revenue in the income statement: a deduction from revenue
- Net accounts receivable, a current asset: a deduction from gross receivables
- An expense in the income statement. But R&D is usually not a loss to shareholders; it is an investment in an asset.

- e. An expense in the income statement, part of operating income (and rarely an extraordinary item). If the restructuring charge is estimated, a liability is also recorded, usually lumped with “other liabilities.”
- f. Part of property, plant and equipment. As the lease is for the entire life of the asset, it is a “capital lease.” Corresponding to the lease asset, a lease liability is recorded to indicate the obligations under the lease.
- g. In the income statement
- h. Part of dirty-surplus income in other comprehensive income. The accounting would be cleaner if these items were in the income statement.
- i. A liability
- j. Under GAAP, in the statement of owners equity. However from the shareholders’ point of view, preferred stock is a liability
- k. Under GAAP, an expense. However from the shareholders’ point of view, preferred dividends are an expense. Preferred dividends are deducted in calculating “net income available to common” and for earnings in earnings per share.
- l. In most cases stock option compensation expense is not recorded at all, so comprehensive income to shareholders is overstated. FASB Statement No. 123 requires the expense to be disclosed in footnotes. In 2003 both the FASB and IASB were proposing to require firms to record the expense and some firms were voluntarily doing so. Check the current status of the regulations.

E2.7. Violations of the Matching Principle

- a. Expenditures on R&D are investments to generate future revenues from drugs, so are assets whose historical costs ideally should be placed on the balance sheet and amortized over time against revenues from selling the drugs. Expensing the expenditures immediately results in mismatching: revenues from drugs developed in the past are charged with costs associated with future revenues. However, the benefits of R&D are uncertain. Accountants therefore apply the reliability criterion and do not recognize the asset. Effectively GAAP treats R&D expenditures as a loss.
- b. Advertising and promotion are costs incurred to generate future revenues. Thus, like R&D, matching requires they be booked as an asset and amortized against the future revenues they promote, but GAAP expenses them.
- c. Film production costs are made to generate revenues in theaters. So they should be matched against those revenues as the revenues are earned. In this way, the firm reports its ability to add value by producing films.

E2.8. Using Accounting Relations to Check Errors

Ending shareholders' equity can be derived in two ways:

1. Shareholders' equity = assets – liabilities
2. Shareholders' equity = Beginning equity + comprehensive income – net dividends

So, if the two calculations do not agree, there is an error somewhere. First make the calculations for comprehensive income and net dividends:

$$\begin{aligned}\text{Comprehensive income} &= \text{net income} + \text{other comprehensive income} \\ &= \text{revenues} - \text{expenses} + \text{other comprehensive income} \\ &= 2,300 - 1,750 - 90 \\ &= 460\end{aligned}$$

$$\begin{aligned}
 \text{Net dividend} &= \text{dividends} + \text{share repurchases} - \text{share issues} \\
 &= 400 + 150 - 900 \\
 &= -350
 \end{aligned}$$

Now back to the two calculations:

$$\begin{aligned}
 1. \text{ Shareholders' equity} &= 4,340 - 1,380 \\
 &= 2,960
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Shareholders' equity} &= 19,140 + 460 - (-350) \\
 &= 19,950
 \end{aligned}$$

The two numbers do not agree. There is an error somewhere.

E2.9. Mismatching at WorldCom

Capitalizing costs takes them out of the income statement, reducing earnings. But the capitalized costs are then amortized against revenues in later periods, reducing earnings. The net effect on income in any period is the amount of costs for that period less the amortization of costs for previous periods. The following schedule calculates the net effect. The numbers in parentheses are the amortizations, equal to the cost in prior periods dividend by 20.

	1Q, 2001	2Q, 2001	3Q, 2001	4Q, 2001	1Q, 2002
1Q, 2001 cost: \$780	\$780	\$ (39)	\$ (39)	\$ (39)	\$ (39)
2Q, 2001 cost: 605		605	(30)	(30)	(30)
3Q, 2001 cost: 760			760	(38)	(38)
4Q, 2001 cost: 920				920	(46)
1Q, 2002 cost: 790					790
Overstatement of earnings	\$780	\$566	\$691	\$813	\$637

The financial press at the time reported that earnings were overstated by the amount of the expenditures that were capitalized. That is not quite correct.

Minicases

M2.1. Reviewing the Financial Statements of Nike, Inc.

Introduction

This case runs through the basics of financial statements. It also introduces the student to Nike, a firm that gets considerable attention in the text. Much of the financial statement analysis in Part Two of the book uses Nike as an example. In Part Three, Nike's shares are valued as an illustration of techniques. The **BYOAP** feature on the web site uses Nike as an example as it instructs students in building their own analysis and valuation spreadsheets.

The Nike analysis in the book and in **BYOAP** covers the period, 1995-2001. The statements in this case are for 2002. So the student can get an appreciation of Nike's evolving financial statements over a considerable period. This is a period when Nike went from being a "hot stock" to a mature company (as the second paragraph of the case indicates), so the student can also trace the revised pricing of the stock during this period as he or she also studies the evolution of the fundamentals.

The instructor may also use this case for a broader discussion of the accounting principles that were discussed in the chapter.

The Questions

A Shareholders' equity = assets – minus liabilities

$$\$3,839.0 = \$6,443.0 - \$2,604$$

Net income = revenue – expenses

$$\$663.3 = \$9,893.0 - \$9,229.7$$

Cash from operations + cash from investment + cash from financing – effect of
exchange rate = change in cash and cash equivalents

$$\$1,081.5 - \$302.8 - \$478.2 - \$29.0 = \$271.5$$

B. Other comprehensive income is in the Statements of Shareholders' Equity. It is made up as follows:

Foreign currency translation loss	\$(1.5)
Cum. Effect of change in accounting principle	56.8
Loss on hedge derivatives	<u>(95.6)</u>
Other comprehensive income	<u>\$(40.3)</u>

Comprehensive income = net income + other comprehensive income

$$\$623.0 = \$663.3 - \$40.3$$

Note that cumulative effects of accounting changes are reported in the income statement when they are negative (as in Nike's income statement), but in the equity statement when they are positive (income increasing).

C. Net payout = dividends + stock repurchases – share issues

$$\$285.0 = \$128.6 + \$237.7 - \$81.3$$

The forfeiture of shares by employees is treated as a negative share issue, but it can also be treated as a share repurchase.

The issue of the amortization of unearned compensation may come up in discussions. This is not part of comprehensive income as it is an amortization of a (deferred) charge that is already included in net income. See Chapter 8 for the appropriate treatment.

D. Gross margin = sales revenue – cost of sales

$$\$3,888.3 = \$9,893.0 - \$6,004.7$$

Effective tax rate = tax expense/income before tax

$$= \$349.0/\$1,017.3$$

$$= 34.3\%$$

Note that any income reported below the tax line (in this case, the cumulative effect of an accounting change) is reported net of tax, as are other comprehensive income items.

$$\text{ebit} = \text{Income before tax} + \text{interest expense}$$

$$= \$1,017.3 + 47.6$$

$$= \$1,064.9$$

$$\text{ebitda} = \text{ebit} + \text{depreciation} + \text{amortization}$$

$$= \$1,064.9 + 223.5 + 53.1$$

$$= \$1,341.5$$

Depreciation and amortization are obtained from the cash flow statement where they are added back to net income to get cash from operations.

$$\text{Sales growth rate} = \text{sales}(2002)/\text{sales}(2001) - 1$$

$$= 4.26\%$$

- E. Basic earnings per share is net income available for common divided by current shares outstanding. The calculation uses a weighted average of outstanding shares during the year.

Diluted earnings per share is based on shares that would be outstanding if contingent equity claims (like options, warrants and convertible bonds and preferred dividends) were converted into common shares. The numerator makes an adjustment for estimated earnings from the proceeds from the share issues at conversion. (The treasury stock method can be explained at this point.)

- F. Only those inventory costs that are incurred for the purchase or manufacture of goods sold are included in cost of goods sold. The costs incurred for goods not sold are retained in the balance sheet. This results in a matching of revenues with the costs incurred in gaining the revenues.

- G. Research and development costs are expensed as incurred (under FASB statement No. 2), so they are reported in the income statement (aggregated in selling and administrative costs in Nile's case). An exception is R & D for software development where costs are capitalized in the balance sheet if the development results in a "technical feasibility" product.

The treatment violates the matching principle if the R & D is expected to produce future revenue. Current revenues are charged with the cost rather than the future revenues that the R & D generates. Matching requires that the costs be capitalized and amortized against the future revenues. However, GAAP considers the future revenues to be too uncertain – too speculative -- so does not recognize the asset.

- H. The amount of \$77.4 million is the allowance for doubtful accounts for 2002. This allowance is the estimate of portion of the gross receivables that are expected not to be collected.
- I. Deferred taxes are taxes on the difference between reported income and taxable income that is due to timing differences in the measurement of income. If reported income is greater than taxable income, a liability results: there is a liability to pay taxes on the reported income that is not yet taxed. If reported income is less than taxable income, an assets results: the firm has paid taxes on income that has not yet been reported. Nike has both.
- J. Goodwill is the difference between the price paid for acquiring another firm and the amount at which the net assets acquired are recorded on the balance sheet. Goodwill is carried on the balance sheet until it is deemed to be impaired, at which point it is written down to its estimated fair value (FASB Statement No. 142).

- K. Contingent liabilities that are deemed to be “probable” -- it is probable that the firm will have to meet a claim -- must be recorded on the balance sheet if they can be reasonably estimated. Contingent liabilities that do not meet these criteria are not recorded, but are disclosed in footnotes (unless they are only “remotely possible,” in which case they are not recognized at all). The entry in the balance sheet with a zero indicates that the liabilities may exist, but fall into the footnote disclosure category (and so are not given a dollar amount on the balance sheet). FASB Statement No. 5.
- L. Paid-in value is stated (or par) value plus capital in excess of stated value. The total (for both class A and class B shares) for Nike is \$541.5 million at the end of 2002. Notionally it represents the net amount paid in to the firm by shareholders (net of stock repurchases) but, as some repurchases go to Treasury Stock and, indeed, can be charged against retained earnings (as here), the number does not mean much.
- M. Net income is calculated under the rules of accrual accounting. Accruals (like receivables in revenues and payables in expenses) do not involve cash flows, so accruals explain the difference between net income and cash from operations. In addition, cash from operations includes the tax benefits from exercising stock options which is a cash flow that is not included in income. See answer to part n.
- N. This tax benefit is the reduction in taxes paid because the firm deducts the cost of stock options on its tax return. The deduction is equal to the market price at the time of the exercise of the options minus the exercise price. It is not part of net income because GAAP does not recognize the expense that gives rise to the deduction as part of income. Chapter 8 goes into the issue of stock options in detail.
- O. The difference is due to interest paid and interest due for the period under accrual accounting. As the amount paid is larger than the expense, Nike must have paid interest in 2002 for amounts owed and accrued in 2001.

P. The unearned compensation explains the discrepancy. See answer to part c above.

Also see Chapter 8.

Q. The following items are (probably) close to fair value:

Cash and cash equivalents

Accounts receivable (provided the allowance for doubtful debts is unbiased)

Prepaid expenses

Notes payable

Accounts payable

Debt (current and long-term)

Accrued liabilities (maybe -- if they are estimated in an unbiased way)

Income taxes payable

R. Trailing P/E = Price per share/eps = $\$50/\$2.48 = 20.2$.

P/B = Price of equity/book value of equity = $\$13,305/\$3,839 = 3.5$.

The total price of the equity is price per share multiplied by shares outstanding:

Market price of equity = $\$50 \times 266.1 = \$13,305$ million

Shares outstanding are the total of Class A and B shares (which share profits equally).

Both the P/E ratio and the P/B ratio are above the median historical ratios in Figures 2.2 and 2.3. The P/E ratio is at the level of the median P/E in 2001 (in Figure 2.3) and the P/B ratio is above the 75th percentile in 2001.

(The instructor can introduce the dividend-adjusted P/E at this point – see Chapters 3 and 6.)

