10.5 Recording Asset Exchanges and Expenditures That Affect Older Assets

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Record the exchange of one asset for another based on fair value and explain the rationale for this method of recording.
2. Determine when the fair value of an asset received is used for recording an exchange rather than the fair value of the property surrendered.
3. Compute the allocation of cost between assets when more than one is required in a single transaction.
4. Know when expenditures must be capitalized for an asset that has been in use for some time and the impact on future depreciation expense calculations.

Question: Some assets are acquired by exchange instead of through purchase (**asset exchange***). For example, the limousine discussed earlier might well be traded away after two years for a newer model. Such transactions are common, especially with vehicles. How is the cost of a new asset determined if obtained through an exchange rather than an acquisition?*

To illustrate, assume that this limousine is traded to an automobile manufacturer for a new model on December 31, Year Two. By that time as shown previously, the net book value had fallen to $30,000 (cost of $90,000 less accumulated depreciation of $60,000). However, because company employees have taken excellent care of the vehicle during those two years, fair value is actually $45,000. As has been discussed, book value rarely equals fair value during the life of property and equipment. Assume that the vehicle being acquired is worth $100,000 so the company also pays $55,000 in cash ($100,000 value received less $45,000 value surrendered) to the manufacturer to complete the trade. How is such an exchange recorded?

Answer: In virtually all cases, fair value is the accounting basis used to record items received in an exchange. The book value of the old asset is removed from the accounts and the new model is then reported at fair value. Fair value is added; book value is removed. A gain or loss is recognized for the resulting change in the company's reported financial position.

In this example, the company surrenders two assets with a total fair value of $100,000 ($45,000 value for the old limousine plus $55,000 in cash) to obtain the new vehicle. However, the assets given up have a total net book value of only $85,000 ($30,000 and $55,000). A $15,000 gain is recognized on the exchange ($100,000 fair value less $85,000 book value). The gain results because the old limousine had not lost as much value as the depreciation process had expensed. The net book value was reduced to $30,000 but the vehicle was actually worth $45,000[1].

Figure 10.12 Recording Exchange of Assets

Vehicle (New)	100,000	
Accumulated Depreciation	60,000	
Vehicle (Old)		90,000
Cash		55,000
Gain on Exchange of Limousines		15,000

Question: In the previous example, the value of the assets surrendered ($45,000 plus $55,000 or $100,000) equals the value of the new limousine received ($100,000). The trade was exactly even. Because one party has better negotiating skills or a serious need for a quick trade, the two values can differ, at least slightly. For example, the limousine company might give up its old vehicle (worth $45,000) and cash ($55,000) and manage to convince the automobile manufacturer to hand over a new asset worth $110,000. If the values are not equal in an exchange, which fair value is used for reporting purposes? Should the new limousine be recorded at the $100,000 value given up or the $110,000 value received?

Answer: To stay consistent with the historical cost principle, the new asset received in a trade is recorded at the fair value of the item or items surrendered. Giving up the previously owned property is the sacrifice made to obtain the new asset. That is its cost to the new buyer.

Generally, the fair value of the items sacrificed equals the fair value of the items received. Most exchanges involve properties of relatively equal worth; a value of $100,000 is surrendered to acquire a value of $100,000. However, that is not always the case. Thus, if known, the fair value given up always serves as the basis for recording the asset received. Only if the value of the property traded away cannot be readily determined is the new asset recorded at its own fair value.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092907.html

Question: At times, two or more assets are acquired for a single price. The most common example is the purchase of a building along with the land on which it is constructed. As has been discussed, the portion of the cost assigned to the building is depreciated over its useful life in some systematic and rational manner. However, land does not have a finite life. Its cost remains an asset so that there is no impact on reported net income over time. How does an accountant separate the amount paid for land from the cost assigned to a building when the two are purchased together?

Assume a business pays $5.0 million for three acres of land along with a five-story building. What part of this cost

is attributed to the land and what part to the building? Does management not have a bias to assign more of the $5.0 million to land and less to the building to reduce the future amounts reported as depreciation expense?

Answer: Companies do occasionally purchase more than one asset at a time. This is sometimes referred to as a **basket purchase**. For example, a manufacturer might buy several machines in a single transaction. The cost assigned to each should be based on their relative values.

For this illustration, assume that the land and building bought for $5.0 million have been appraised at $4.5 million and $1.5 million, respectively, for a total of $6.0 million. Perhaps the owner needed cash immediately and was willing to accept a price of only $5.0 million. For the buyer, the land makes up 75 percent of the value received ($4.5 million/$6.0 million) and the building the remaining 25 percent ($1.5 million/$6.0 million). The cost is simply assigned in those same proportions: $3.75 million to the land ($5.0 million × 75 percent) and $1.25 million to the building ($5.0 million × 25 percent).

Figure 10.13 Allocation of Cost between Land and Building

Land	3,750,000	
Building	1,250,000	
Cash		5,000,000

In the event that the buyer also has to pay other normal and necessary costs (such as attorney fees, title searches, or the like) for cash of $30,000, the adjusted cost of $5,030,000 must still be allocated based on the relative fair value percentages.

Figure 10.14 Total Cost Allocated between Land and Building

Land	3,772,500 (75 percent of 5,030,000)	
Building	1,257,500 (25 percent of 5,030,000)	
Cash		5,030,000

Occasionally, in a basket purchase, the value can be determined for one of the assets but not for both. As an example, the above land might be worth $4.5 million but no legitimate value is available for the building. Similar structures might not exist in this area for comparison purposes. In such cases, the known value is used with the remainder of the cost assigned to the other property. Assume that the total cost of these properties is $5,030,000. If the land is known to be worth $4.5 million but no reasonable value can be ascribed to the building, the excess $530,000 is arbitrarily allocated to this second asset.

Figure 10.15 Allocation Based on Known Value for Land Only

Land	4,500,000	
Building	530,000	
Cash		5,030,000

Does the possibility of bias exist in these allocations? Accounting is managed by human beings and they always face a variety of biases. That potential problem is one of the primary reasons that independent auditors play such an important role in the financial reporting process. These outside experts work to ensure that financial figures are presented fairly and without bias. Obviously, if the buyer assigns more of the cost of a basket purchase to land, future depreciation will be less and reported net income will be higher. In contrast, if more of the cost is allocated to the building, depreciation expense is higher and taxable income and income tax payments are reduced. That is also a tempting choice.

Thus, the independent auditor must gather evidence to provide reasonable assurance that such allocations are based on reliable appraisal values so that both the land and the building are fairly presented. However, a decision maker is naïve not to realize that potential bias does exist in any reporting process.

Question: Assume that a cost of $1,257,500 is assigned to the building above. Assume further that it has an expected life of twenty years and straight-line depreciation is applied with no residual value. Thus, after eight years, accumulated depreciation is $503,000 ($1,257,500 × 8 years/20 years). At that point, the company spends an additional $150,000 on the building. Should an expenditure associated with property and equipment that is already in use be capitalized (added to the asset account) or expensed immediately?

Answer: The answer to this question depends on the impact that this work has on the building. In many cases, additional money is spent simply to keep the asset operating with no change in expected life or improvement in future productivity. Such costs are recorded as maintenance expense if they were anticipated or repair expense if unexpected. For example, changing the oil in a truck at regular intervals is a maintenance expense whereas fixing a dent from an accident is a repair expense. This distinction has no impact on reported income.

Figure 10.16 Recording of Cost to Maintain or Repair Asset

Maintenance (or Repair) Expense	150,000	
Cash		150,000

However, if the $150,000 cost increases the future operating capacity of the asset, the amount should be capitalized. The building might have been made bigger, more efficient, more productive, or less expensive to operate. If the asset has actually been improved by the cost incurred, historical cost is raised.

Figure 10.17 Cost Capitalized Because of Increase in Operating Capacity

Building	150,000	
Cash		150,000

Assuming that no change in either the useful life or the residual value occurs as a result of this work, depreciation expense will be $75,375 in each of the subsequent twelve years. The newly increased book value is simply allocated over the useful life that remains.

($1,257,500 +$150,000 – $503,000)/12 remaining years = $75,375

Another possibility does exist. The $150,000 might extend the building's life without creating any other improvement. Because the building will now generate revenue for a longer period of time than previously expected, this cost is capitalized. A clear benefit has been gained from the amount spent. The asset is not physically bigger or improved but its estimated life has been extended. Consequently, the building is not increased directly, but instead, accumulated depreciation is reduced. In effect, this expenditure has recaptured some of the previously expensed utility.

Figure 10.18 Cost Capitalized Because Expected Life Is Extended

Accumulated Depreciation	150,000	
Cash		150,000

Assuming the $150,000 payment extends the remaining useful life of the building from twelve to eighteen years with no accompanying change in residual value, depreciation expense will be $50,250 in each of these remaining eighteen years. Once again, the book value has increased but, in this situation, the life of the asset has also been lengthened.

reduced accumulated depreciation: $503,000 – $150,000 = $353,000
adjusted net book value: $1,257,500 – $353,000 = $904,500
annual depreciation: $904,500/18 years = $50,250

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092959.html

Key Takeaways

Assets are occasionally obtained through exchange. Reported cost is established based on the fair value of the property surrendered because that measures the company's sacrifice. The asset received is only recorded at its own fair value if the value of the asset given up cannot be determined. When more than one asset is acquired in a transaction, the cost

allocation is based on the relative fair values of the items received. Subsequent costs incurred in connection with property and equipment are capitalized if the asset has been made bigger or better in some way. If the length of the remaining useful life is extended, capitalization is established by reducing accumulated depreciation.

[1]Accounting rules are created through a slow and meticulous process to avoid unintended consequences. For example, assume that Company A and Company B buy identical antique limousines for $30,000 that then appreciate in value to $100,000 because of their scarcity. Based solely on the accounting rule described in this section, if the two companies exchange these assets, each reports a gain of $70,000 while still retaining possession of an identical vehicle. This reporting is not appropriate because nothing has changed for either party. In reality, no gain occurred since the companies retain the same financial position as before the trade. Thus, in creating its official guidance as described above, FASB held that an exchange must have commercial substance to justify using fair value. In simple terms, the asset acquired has to be different from the asset surrendered as demonstrated by the amount and timing of future cash flows. Without a difference, no rationale exists for making the exchange. If a trade does not have commercial substance, net book value is retained so that no gain is recognized.

10.6 Reporting Land Improvements and Impairments in the Value of Property and Equipment

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Recognize the type of assets that are often labeled as land improvements and understand that the distinction between land and land improvements is not always clear.
2. Perform the two tests utilized to identify the need to recognize a loss because of impairment in the value of property or equipment.
3. Explain the justification for capitalizing interest incurred during the construction of property and equipment.

Question: Land is not subjected to the recording of depreciation expense because it has an infinite life. Often, though, a parking lot, fence, sidewalk, or the like will be attached to land. They, however, do have finite lives. How are attachments to land—such as a sidewalk—reported? Should they be depreciated?

Answer: Any asset that is attached to land but has a finite life is recorded in a separate account, frequently referred to as **land improvements**, and then depreciated over those estimated number of years. The cost of a parking lot or sidewalk, for example, is capitalized and then written off to expense in the same manner as the accounting for buildings and equipment.

In some cases, a distinction between land and improvements is difficult to draw. Accounting rules do not always provide clear guidance for every possible situation. Judgment is occasionally necessary. For example, trees, shrubbery, and sewer systems might be viewed as normal and necessary costs to get land in the condition and position to generate revenues rather than serving as separate assets. Is a sewer system a cost incurred so that land can be utilized or is it truly a distinct asset? U.S. GAAP does not provide absolute rules so such costs may be carried within the land account and not depreciated or reported as land improvements subject to depreciation. Such flexibility in accounting is more prevalent than might be imagined.

Question: Property and equipment is recorded at historical cost, which is subsequently depreciated over its anticipated useful life. At some point, the asset is sold, traded, used up, or disposed of in some other manner. Land is an exception in that it will last forever.

While in use, such assets may lose their value rather rapidly if adverse conditions arise. For example, the economy or the environment might decline and impact the value of such assets. Increases in the fair value of property and equipment are ignored but what about decreases?
If the value of property and equipment becomes impaired, is any accounting recognition made of that loss prior to disposal?
Is historical cost always the basis for reporting regardless of the worth of property and equipment?

For example, assume that a company constructs a plant for $3 million to manufacture widgets. However, shortly thereafter, the global market for widgets falls precipitously so that the owner has little use for this structure. No one wants to own a manufacturing plant for widgets. Does historical cost continue to be used in accounting for property and equipment even if the value has been damaged significantly?

Answer: Accounting follows the principle of conservatism. Concern always arises when any property or equipment is reported at an amount in excess of fair value. Because temporary swings in value can happen frequently and then rebound, they do not require accounting modification. Historical cost remains the reporting basis. Permanent declines in the worth of an asset, though, need to be noted in some appropriate manner. Consequently, two tests have been created by FASB to determine if the value of property or equipment has been impaired in such a serious fashion that disclosure of the damage is necessary.

If possible impairment of property or equipment is suspected, the owner estimates the total amount of cash that will be generated by the asset during its remaining life. The resulting cash figure is then compared with the asset's current book value to see if it is lower. This **recoverability test** indicates whether a problem exists that is so significant that immediate recognition is warranted.

If expected future cash flows exceed the present book value of property or equipment, no reporting is necessary. The asset can still be used to recover its own book value; no permanent impairment has occurred according to the rules of U.S. GAAP.

Conversely, if an asset cannot even generate sufficient cash to cover its own book value, it has become a detriment to the owner. In that case, the accountant performs a second test (the **fair value test**) to determine the amount of loss to be reported. Book value is compared to present fair value, the amount for which the asset could be sold. For property and equipment, the lower of these two figures is then reported on the balance sheet. Any reduction in the reported asset balance creates a loss to be recognized on the income statement[1].

The recoverability test. Assume that the $3.0 million building in the above example has been used for a short time so that it now has a net book value of $2.8 million as a result of depreciation. Also assume that because of the change in demand for its product, this building is now expected to generate a net positive cash flow of only $200,000 during each of the next five years or a total of $1.0 million. No amount of cash is expected after that time. This amount is far below the book value of $2.8 million. The company will not be able to recover the asset's book value through these cash flows. As a result, the fair value of the building must be determined to calculate the amount of any loss to be reported.

The fair value test. Assuming that a real estate appraiser believes the building could be sold for only $760,000, fair value is below book value ($2.8 million is obviously greater than $760,000). Therefore, the asset account is reduced to this lower figure creating a reported loss of $2,040,000 ($2.8 million less $760,000).

Figure 10.19 Loss on Impaired Value of Building

In its 2007 financial statements, Ford Motor Company describes this process as follows:

> We monitor the carrying value of long-lived asset groups held and used for potential impairment when certain triggering events have occurred. These events include current period losses combined with a history of losses or a projection of continuing losses. When a triggering event occurs, a test for recoverability is performed, comparing projected undiscounted future cash flows (utilizing current cash flow information and expected growth rates) to the carrying value of the asset group. If the test for recoverability identifies a possible impairment, the asset group's fair value is measured relying primarily on the discounted cash flow methodology.

In its 2008 financial statements, Ford provided updated information on the handling of impaired assets from a somewhat different perspective:

> Based upon the financial impact of rapidly-changing U.S. market conditions during the second quarter of 2008, we projected a decline in net cash flows for the Ford North America segment. The decline primarily reflected: (1) a more pronounced and accelerated shift in consumer preferences away from full-size trucks and traditional sport utility vehicles ('SUVs') to smaller, more fuel-efficient vehicles as a result of higher fuel prices; (2) lower-than-anticipated U. S. industry demand; and (3) greater-than-anticipated escalation of commodity costs. As a result, in the second quarter of 2008 we tested the long-lived assets of this segment for impairment and recorded in *Automotive cost of sales* a pre-tax charge of $5.3 billion, representing the amount by which the carrying value of these assets exceeded the estimated fair value.

Talking with an Independent Auditor about International Financial Reporting Standards (Continued)

Following is a continuation of our interview with Robert A. Vallejo, partner with the accounting firm PricewaterhouseCoopers.

Question: The impairment of operational assets is an important reporting issue for many companies because acquired property does not always achieve anticipated levels of profitability. Buildings can be constructed and machinery purchased that simply fail to be as productive as company officials had hoped. According to U.S. GAAP, an asset of this type is viewed as impaired when the total of all future cash flows generated by the asset are expected to be less than its current book value. At that point, the owner cannot even recover the book value of the asset through continued usage. Consequently, the amount reported for the operational asset is reduced to fair value and a loss recognized. Does IFRS handle this type of problem in the same way?

Rob Vallejo: The need to record impairment losses is the same under IFRS but the measurement process is different. The international standards require companies to identify an asset's fair value by calculating the present value of the future cash flows[2] or its net realizable value (anticipated sales price less costs required to sell) if that figure is higher. The asset's value is said to be impaired if this fair value (rather than total cash flows) is below book value. If so, a loss is reported for the reduction from book value to fair value. Also, under IFRS, companies return previously impaired assets to original book value if fair value subsequently increases. In contrast, U.S. GAAP does not allow a write up in value once impairment has been recorded.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092960.html

Question: A company is considering buying a building for $1.0 million on January 1, Year One so that a retail

store can be opened immediately. The company can borrow the money from a bank that requires payment of $100,000 in interest (an assumed annual rate of 10 percent) at the end of each year starting with Year One. As a second possibility, the company can borrow the same $1.0 million on the first day of the current year and use it to build a similar store to be completed and opened on December 31. Again, $100,000 in interest (10 percent annual rate) must be paid every year, starting at the end of Year One. In each case, the same amount of money is expended to acquire this structure. If money is borrowed and a building constructed, is financial reporting the same as if the money had been used to buy property suitable for immediate use?

Answer: A payment of $1 million is made in both cases for the building. However, the interest is handled differently from an accounting perspective. If a building is purchased, the structure can be used immediately to generate revenue. Payment of the $100,000 interest charge allows the company to open the store and start making sales at the beginning of the year. The matching principle requires this cost to be reported as interest expense for Year One. Expense is matched with the revenue it helps create.

In contrast, if company officials choose to construct the building, no revenue is generated during all of Year One. Because of the decision to build rather than buy, revenues are postponed. Without any corresponding revenues, expenses are not normally recognized. Choosing to build this structure means that the interest paid during Year One is a normal and necessary cost to get the building ready to use. Thus, the $100,000 interest is **capitalized** rather than expensed. It is reported as part of the building's historical cost to be expensed over the useful life—as depreciation—in the years when revenues are earned.

The key distinction is that buying enables the company to generate revenue right away whereas constructing the building means that no revenue will be earned during Year One.

Assume, for example, that this building is expected to generate revenues for twenty years with no expected residual value and that the straight-method is used for depreciation purposes. Notice the difference in many of the reported figures.

Store Bought on January 1, Year One—Revenues Generated Immediately

- Historical cost: $1 million
- Interest expense reported for Year One: $100,000
- Interest expense reported for Year Two: $100,000
- Depreciation expense reported for Year One: $50,000 ($1 million/20 years)
- Depreciation expense reported for Year Two: $50,000
- Net book value at end of Year Two: $900,000 ($1 million less $50,000 and $50,000)

Store Constructed during Year One—No Revenues Generated until Year Two

- Historical cost: $1.1 million (includes Year One interest)[3]
- Interest expense reported for Year One: Zero (no revenues earned)
- Interest expense reported for Year Two: $100,000
- Depreciation expense reported for Year One: Zero (no revenues earned)

- Depreciation expense reported for Year Two: $55,000 ($1.1 million/20 years)
- Net book value at end of Year Two: $1,045,000 ($1.1 million less $55,000)

Question: *Are there any vital signs in connection with property and equipment that a decision maker might calculate to help in evaluating the financial health of a business?*

Answer: Ratios and computed amounts are not as common with noncurrent assets as has been seen with current assets. However, the **fixed asset turnover** indicates the efficiency by which a company uses its property and equipment to generate sales revenues. If a company has large amounts reported for various fixed assets but fails to create high revenue balances, the ability of management to make good use of those assets has to be questioned. This figure is calculated by taking net sales for a period and dividing it by the average net book value of the company's property and equipment (fixed assets). For example, a company with $1 million reported for these assets at the beginning of the year but $1.2 million at the end of the year that is able to generate $6.16 million in net sales has a fixed asset turnover of 5.6 times per year. The average of the fixed assets for this period is $1.1 million.

net sales/average net fixed assets
$6,160,000/$1,100,000
5.6 times

Key Takeaways

"Land improvements" is an asset category that includes property attached to land (such as a fence or sewer system) that has a finite life and should be depreciated. However, the distinction between land and land improvements can sometimes be difficult to draw.

Over time, property and equipment can lose a significant amount of value for many reasons. If impairment is suspected, a recoverability test is applied to determine whether enough cash will be generated by the asset to cover its current book value. If not, a fair value test is then applied and the asset's book value is reduced to fair value if that number is lower.

During construction of property and equipment, interest is capitalized rather than expensed because revenues are not being generated by the asset. The matching principle requires recognition of this expense be delayed until revenue is earned.

Talking with a Real Investing Pro (Continued)

Following is a continuation of our interview with Kevin G. Burns.

Question: On a company's balance sheet, the reporting of land, buildings, and equipment is based on historical cost unless impaired in some manner. Those figures often represent expenditures that were made decades ago. However, fair value is a very subjective and ever-changing number in connection with these assets. The debate over the most relevant type of information to provide decision makers is ongoing. Do you think a move should be made to report land, buildings, and equipment at their current fair values?

Kevin Burns: I am a value investor. I look for companies that are worth more than is reflected in the current price of their ownership shares. Therefore, I always like "discovering" little nuggets—like hidden land values—that are still carried at cost after decades of ownership. However in the interest of full disclosure and transparency, I think it would

be fairer to the average investor to have some sort of appraisal done to estimate fair market value. This information could be reported or just disclosed. The difficulty is, of course, how often to appraise? I would like to see a revaluation every five years or if a major event occurs that changes the value of the land, building, and equipment by a significant amount.

Video Clip

">(click to see video)

Unnamed Author talks about the five most important points in Chapter 10 “In a Set of Financial Statements, What Information Is Conveyed about Property and Equipment?”.

[1]Mechanically, an impairment loss for property and equipment could be calculated in any one of several ways. FASB established these two tests and required companies to follow them. The Board apparently believed that this information is more understandable to outside decision makers if a single standard process was established. Thus, according to U.S. GAAP, the recoverability test and the fair value test must be used when impairment is suspected. Some might argue that this process is not the best method for determining an impairment loss. Standardization, though, helps to better ensure universal understanding of the figures being reported.

[2]As will be demonstrated in Chapter 11 “In a Set of Financial Statements, What Information Is Conveyed about Intangible Assets?”, present value is a method used to compute the current worth of a future stream of cash flows by removing the amount of those payments that can be mathematically attributed to interest.

[3]As discussed in intermediate accounting textbooks, the full amount of interest is not actually capitalized here because the borrowed money is only tied up in the construction gradually. Until added to the project, any remaining funds can be used to generate revenues. However, for this introductory textbook, focus is on the need to capitalize interest because the decision to build defers the earning of revenue until the project is completed. Complete coverage of the rules to be applied can be obtained in an intermediate accounting textbook.

Chapter 11: In a Set of Financial Statements, What Information Is Conveyed about Intangible Assets?

Video Clip

(click to see video)

Joe introduces and speaks about the course in general.

11.1 Identifying and Accounting for Intangible Assets

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. List the characteristics of intangible assets and provide several common examples.
2. Understand that intangible assets are becoming more important to businesses and, hence, are gaining increased attention in financial accounting.
3. Record the acquisition of an intangible asset.
4. Describe the amortization process for intangible assets.
5. Explain the accounting used in reporting an intangible asset that has increased in value.

Question: Not so many years ago, most large companies reported significant amounts of property and equipment on their balance sheets but considerably smaller figures for **intangible assets**. *Businesses were often referred to as "bricks and mortar" operations because much of their money was invested in buildings, machinery, and similar long-lived tangible assets*.

Today, the basic nature of many corporate operations has changed dramatically. As of June 30, 2009, Microsoft Corporation reported a total of $14.3 billion for its "goodwill" and "intangible assets, net" versus a mere $7.5 billion in "property and equipment, net of accumulated depreciation." For Yahoo! Inc., the difference is similarly striking. On December 31, 2008, Yahoo! disclosed $3.9 billion of "goodwill" and "intangible assets, net" but only $1.5 billion in "property and equipment, net."

The rise in the value and importance of intangible assets might well be the biggest change experienced in the reporting of businesses over the last ten to twenty years. The sudden growth of Internet and technology companies like Microsoft and Yahoo! has focused attention on the significance of ideas and innovation for achieving profits.

Financial accounting rules evolve as the nature of business moves forward over time. Not surprisingly, much debate has taken place recently concerning the methods by which intangible assets are reported in a set of financial statements. A relatively minor topic in the past has gained a genuine level of importance. Should an idea or an invention be reported in the same manner as a building or a machine? For financial accounting, that is a very important question. As a starting point for this discussion, the basic nature of intangible assets needs to be understood. What is an intangible asset and what are some common examples?

Answer: As the title implies, an intangible asset is one that lacks physical substance. It cannot be touched but is expected to provide future benefits for longer than one year. More specifically, it will assist the reporting company in generating revenues during future periods. Except for a few slight variations, intangible assets are reported in

a manner similar to a building or equipment. Historical cost serves as the basis for reporting. If the intangible has a finite life, the depreciation process (although the term “amortization” is normally utilized in connection with intangibles) reclassifies this cost from asset to expense over that estimated period.

In creating the authoritative pronouncement Statement No. 141, *Business Combinations* (issued in 2001 and revised in 2007), FASB attempted to provide structure for the reporting process by placing all intangibles into six major categories:

1. Artistic-related (such as **copyrights**)
2. Technology-related (patents)
3. Marketing-related (trademarks)
4. Customer-related (a database of customer information)
5. Contract-related (franchises)
6. Goodwill

Notice that in all cases (except for goodwill, which will be explained later in this chapter), each intangible asset is actually an established right of usage. For example, according to the Web site for the United States Copyright Office, a copyright provides its owner with the right to use “literary, dramatic, musical, artistic, and certain other intellectual works.” Similarly, the United States Patent and Trademark Office Web site explains that “a patent for an invention is the grant of a property right to the inventor.”

In simple terms, an intangible asset is usually a right that helps the owner to generate revenues.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092962.html

Question: Intangible assets are accounted for in a manner that is similar to property and equipment. Assume that an automobile company is creating a television commercial for one of its new products. On January 1, Year One, the company pays $1 million cash to a famous musical group (such as The Rolling Stones) for the right to use a well-known song in this video. The band holds the legal copyright on this piece of music and agrees to share that right with the automobile company so that the song can be played in one or more commercials. What accounting is made by a company that acquires an intangible asset such as a copyright?

Answer: The buyer of an intangible asset prepares a journal entry that is basically identical to the acquisition of inventory, land, or a machine. As with all those other assets, the intangible is recorded initially at historical cost.

Figure 11.1 January 1, Year One—Acquisition of Right to Use Copyrighted Song

Copyright	1,000,000	
Cash		1,000,000

Many intangible assets have defined legal lives. For example, copyrights extend for seventy years beyond the creator's life. Acquired intangibles (such as the copyright for this song) often have lives legally limited by the contractual agreement. However, the true useful life of most intangibles is generally only a small number of years. Few intangibles manage to help a company generate revenues for decades. **Amortization** of the cost should extend over the shorter of the asset's useful life or its legal life.

To illustrate, assume that this piece of music is expected to be included by the automobile company in its commercials for the next four years and then a different advertising campaign will be started. Annual amortization is $250,000 ($1 million cost/4 year life) if the straight-line method is applied (which is normal for intangible assets).

Figure 11.2 December 31, Year One—First Year Amortization of Copyright Cost

Amortization Expense	250,000	
Copyright		250,000

At the end of the first year, the copyright appears on the balance sheet of the automobile company as $750,000, the remainder of its historical cost. Note that the credit in this adjusting entry is a direct decrease in the asset account. Although establishing a separate contra account (such as accumulated amortization) is permitted, most companies simply reduce the intangible asset balance because the utility is literally shrinking. Depreciation of a building or equipment does not mean that the asset is getting smaller; a four-story building remains a four-story building throughout its life. Reducing the building account would not reflect reality. In contrast, the above right to use this song did get smaller. The company went from holding a copyright to play this music in its commercials for an expected four years to a copyright that will only be used for three more years.

Question: In the above example, the automobile company acquired the right to use this music for $1 million. That was its historical cost, the figure to be reported for the asset on the company's balance sheet. The number was objectively determined and the accounting straightforward. However, the artist who originally created the music (or his or her company) still holds the original copyright. As indicated by this sale, the rights to this music are extremely valuable. How does the creator report an intangible asset such as a copyright? Should the copyright to this piece of music now be reported by the artist (The Rolling Stones) at its proven value of $1 million?

Answer: Depending on the specific terms of the contract, the creator often continues to possess the copyright and maintains the asset on its own balance sheet. In most cases, the original artist only conveyed permission to the company to use this music for specific purposes or a set time period. However, the copyright does not appear on the creator's books at its $1 million value; rather, it remains at historical cost less any amortization to date. That

is the reporting basis for intangible assets according to U.S. GAAP in the same way as for land, buildings, and equipment.

Historical cost for copyrights and other similar intangibles typically includes attorney fees as well as any money spent for legal filings and registration with the appropriate authorities. Subsequently, such intangible assets are sometimes the subject of lawsuits if other parties assert claims to the same ideas and creations. The cost of a successful defense is also capitalized and then amortized over the shorter of the remaining legal life or the estimated useful life.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092963.html

Talking with an Independent Auditor about International Financial Reporting Standards (Continued)

Following is a continuation of our interview with Robert A. Vallejo, partner with the accounting firm PricewaterhouseCoopers.

Question: Under U.S. GAAP, intangible assets with a finite life are reported at historical cost less any accumulated amortization recognized to date. Except in impairment cases, fair value is ignored completely. How are intangible assets reported when IFRS standards are applied?

Robert Vallejo: Unless a company chooses to revalue its intangible assets regularly (an option that is available under IFRS but rarely chosen in practice because it must then be done over time), the accounting under U.S. GAAP and IFRS is basically the same. After initial recognition under IFRS, intangible assets are carried at cost less accumulated amortization (as well as any impairment losses). If an active market is available, fair value of all similar intangible assets can be chosen but, again, that value must then be updated frequently. Per IAS 38, Intangible Assets, the method of amortization that is used should reflect the pattern in which the asset's future economic benefits are expected to be realized by the entity. If that pattern cannot be determined reliably, the straight-line method of amortization must be used.

Key Takeaway

The reporting of intangible assets has grown in significance in recent years because of the prevalence and success of technology and electronics companies. For the most part, intangible assets provide a company with a right to use an idea, invention, artistic creation, or the like. Copyrights, patents, and trademarks are common examples. They are recorded at historical cost which is then amortized to expense over the shorter of the legal life or the useful life of the intangible. The accounting resembles that of property and equipment so that, for example, increases in value are not reported.

11.2 The Balance Sheet Reporting of Intangible Assets

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Explain the preferred use of historical cost as the basis for recording property and equipment and intangible assets.
2. Realize that the use of historical cost means that a company's intangible assets such as patents and trademarks can be worth much more than is shown on the balance sheet.
3. Recognize that large reported intangible asset balances can result from their acquisition either individually or through the purchase of an entire company that holds valuable intangible assets.
4. Show the method of recording intangible assets when the owner is acquired by a parent company.

Question: Much was made in earlier chapters about the importance of painting a portrait that fairly presents the financial health and future prospects of an organization. Many companies develop copyrights and other intangible assets that have incredible value but little or no actual cost. Trademarks provide an excellent example. The golden arches that represent McDonald's must be worth billions but the original design cost was probably not significant and has likely been amortized to zero by now. Could the balance sheet of McDonald's possibly be considered as fairly presented if the value of its primary trademark is omitted?

Many other companies, such as Walt Disney, UPS, Google, Apple, Coca-Cola, and Nike, rely on trademarks to help create awareness and brand loyalty around the world. Are a company's reported assets not understated if the value of a trademark is ignored despite serving as a recognizable symbol to millions of potential customers? With property and equipment, this concern is not as pronounced because those assets tend to have significant costs whether bought or constructed. Internally developed trademarks and other intangibles often have little actual cost despite eventually gaining immense value.

Answer: Reported figures for intangible assets such as trademarks may indeed be vastly understated on a company's balance sheet when compared to their fair values. Decision makers who rely on financial statements need to understand what they are seeing. U.S. GAAP requires that companies follow the historical cost principle in reporting many assets. A few exceptions do exist and several are examined at various points in this textbook. For example, historical cost may have to be abandoned when applying the lower-of-cost-or-market rule to inventory and also when testing for possible impairment losses of property and equipment. Those particular departures from historical cost were justified because the asset had lost value. Financial accounting tends to follow the principle of conservatism. Reporting an asset at a balance in excess of its historical cost basis is much less common.

In financial accounting, what is the rationale for the prevalence of historical cost, which some might say was an

obsession? As discussed in earlier chapters, cost can be reliably and objectively determined. It does not fluctuate from day to day throughout the year. It is based on an agreed-upon exchange price and reflects a resource allocation judgment made by management. Cost is not an estimate so it is less open to manipulation. While fair value may appear to be more relevant, different parties might arrive at significantly different figures. What are the golden arches really worth to McDonald's as a trademark? Is it $100 million or $10 billion? Six appraisals from six experts could suggest six largely different amounts.

Plus, if the asset is not going to be sold, is the fair value of any relevance at the current time?

Cost remains the basis for reporting many assets in financial accounting, though the reporting of fair value has gained considerable momentum. It is not that one way is right and one way is wrong. Instead, decision makers need to understand that historical cost is the generally accepted accounting principle that is currently in use for assets such as intangibles. For reporting purposes, it does have obvious flaws. Unfortunately, any alternative number that can be put forth to replace historical cost also has its own set of problems. At the present time, authoritative accounting literature holds that historical cost is the appropriate basis for reporting intangibles.

Even though fair value accounting seems quite appealing to many decision makers, accountants have proceeded slowly because of potential concerns. For example, the 2001 collapse of Enron Corporation was the most widely discussed accounting scandal to occur in recent decades. Many of Enron's reporting problems began when the company got special permission (because of the unusual nature of its business) to report a number of assets at fair value (a process referred to as "mark to market")[1]. Because fair value was not easy to determine for many of those assets, Enron officials were able to manipulate reported figures to make the company appear especially strong and profitable[2]. Investors then flocked to the company only to lose billions when Enron eventually filed for bankruptcy. A troubling incident of this magnitude makes accountants less eager to embrace the reporting of fair value except in circumstances where very legitimate amounts can be determined. For property and equipment as well as intangible assets, fair value is rarely so objective that the possibility of manipulation can be eliminated.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092943.html

Question: Although a historical cost basis is used for intangible assets rather than fair value, Microsoft Corporation still reported $14.3 billion as "goodwill and intangible assets, net" in 2009, while Yahoo! indicated similar balance sheet accounts totaling $3.9 billion. Even the size of these numbers is not particularly unusual for intangible assets in today's economic environment. As of June 30, 2009, for example, the balance sheet for Procter & Gamble listed **goodwill** *of $56.5 billion and trademarks and other intangible assets, net of $32.6 billion. If historical cost is often insignificant, how do companies manage to report such immense amounts of intangible assets?*

Answer: Two possible reasons exist for intangible asset figures to grow to an incredible size on a company's balance sheet. First, instead of being internally developed, assets such as copyrights and patents are often acquired

from outside owners. Reported balances then represent the historical costs of these purchases which were likely based on fair value. Large payments may be necessary to acquire such rights if their value has been firmly established.

Second, Microsoft, Yahoo! and Procter & Gamble could have bought one or more entire companies so that all the assets (including a possible plethora of intangibles) were obtained. In fact, such acquisitions often occur specifically because one company wants to gain valuable intangibles owned by another. In February 2008, Microsoft offered over $44 billion in hopes of purchasing Yahoo! for exactly that reason. Yahoo! certainly did not hold property and equipment worth $44 billion. Microsoft was primarily interested in acquiring a wide variety of intangibles owned by Yahoo! Although this proposed takeover was never completed, the sheer size of the bid demonstrates the staggering value of the intangible assets that today's companies often possess.

If a company buys a single intangible asset directly from its owner, the financial reporting follows the pattern previously described. Whether the asset is a trademark, franchise, copyright, patent, or the like, it is reported at the amount paid with that cost then amortized over the shorter of its useful life or legal life. Intangible assets that do not have finite lives are not amortized and will be discussed later in this chapter.

Reporting the assigned cost of intangible assets acquired when one company (often referred to as "the parent") buys another company ("the subsidiary") is a complex issue discussed in detail in upper-level Advanced Accounting courses. In simple terms, all the subsidiary's assets (inventory, land, buildings, equipment and the like) are valued and recorded at that amount by the parent as the new owner. This process is referred to as the production of consolidated financial statements. Each intangible asset held by the subsidiary that meets certain rules is identified and also consolidated by the parent at its fair value. The assumption is that a portion of the price conveyed to buy the subsidiary is actually being paid to obtain these identified intangible assets. Thus, to the parent company, fair value reflects the cost that was conveyed to gain the intangible asset.

For example, assume Big Company pays $10 million in cash to buy all the stock of Little Company. Among the assets owned by Little are three intangibles (perhaps a copyright, patent, and trademark) that are each worth $1 million. Little also owns land worth $7 million. The previous book value of these assets is not relevant to Big. Following the takeover, Big reports each of the intangibles on its own balance sheet at $1 million. This portion of the acquisition value is assumed to be the historical cost paid by Big to obtain these assets. A company that buys a lot of subsidiaries will often report large intangible asset balances. When Big buys Little Company, it is really gaining control of all of these assets and records the transaction as follows. This entry will lead to the consolidation of the balance sheet figures.

Figure 11.3 Big Company Buys Little Company, Which Holds Assets with These Values

Copyright	1,000,000	
Patents	1,000,000	
Trademarks	1,000,000	
Land	7,000,000	
Cash		10,000,000

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092908.html

Key Takeaway

Many intangible assets (such as trademarks and copyrights) are reported on the balance sheet of their creator at a value significantly below actual worth. They are shown at cost less any amortization. Development cost is often relatively low in comparison to the worth of the right. However, the reported amount for these assets is not raised to fair value. Such numbers are subjective and open to sudden changes. Furthermore, if the intangible is not held for sale, fair value is of questionable relevance. Companies, though, often pay large amounts to buy intangibles or acquire entire companies that hold numerous intangibles. In accounting for the acquisition of a company, fair value should be assigned to each identifiable subsidiary intangible asset.

[1]Unique accounting rules have long existed in certain industries to address unusual circumstances. College accounting textbooks such as this one tend to focus on general rules rather than delve into the specifics of accounting as it applies to a particular industry.

[2]For a complete coverage of the history and ramifications of the Enron scandal, both the movie and the book *The Smartest Guys in the Room* are quite informative and fascinating.

11.3 Recognizing Intangible Assets Owned by a Subsidiary

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Explain that only those subsidiary intangible assets that meet either of two criteria are recognized separately by a parent after an acquisition.
2. List the two criteria for subsidiary intangibles to be reported by a parent as assets on its consolidated balance sheet.
3. Make the parent's journal entry to record the acquisition of a new subsidiary based on the fair value of its assets and liabilities.
4. Compute the amount to be reported as goodwill on a consolidated balance sheet when a parent acquires a new subsidiary.
5. Understand that amounts attributed to goodwill are not amortized to expense but rather are checked periodically for loss of value.

Question: When one company buys another, the subsidiary is often holding rights to numerous intangibles. As mentioned, acquisitions often take place to gain those rights. The parent places those assets that qualify on its own balance sheet at fair value to show that a portion of the amount paid for the subsidiary was the equivalent of an acquisition price for these items. That is a major reason why companies such as Microsoft and Procter & Gamble report billions of dollars in intangible assets. They have probably purchased many of them by acquiring entire companies.

However, according to U.S. GAAP, certain requirements have to be met before such intangibles are recognized as assets on a consolidated balance sheet following a takeover. What rules must be satisfied for an acquiring company to record an intangible (previously owned by an acquired company) as an asset? A new subsidiary could very well have hundreds of intangibles: patents, copyrights, databases, smart employees, loyal customers, logos, and the like. When the company is acquired, which of these intangibles are recognized on the consolidated balance sheet produced by the new parent?

Answer: FASB has stated that a parent company must identify all intangibles held by a subsidiary on the date of acquisition. For consolidation, the fair value of each of these intangibles is recorded by the parent as an asset but only if contractual or other legal rights have been gained or if the intangible can be separated and sold. This guideline serves as a minimum standard for recognition of intangible assets in a corporate takeover:

1. contractual or other legal rights have been gained or
2. the intangible can be separated from the subsidiary and sold.

Patents, copyrights, trademarks, and franchises clearly meet the first of these criteria. Legal rights are held for patents, copyrights, and trademarks while contractual rights provide the right to operate franchises. By acquiring the subsidiary, the parent now owns these same rights and should record them on the consolidated balance sheet at fair value.

Other intangibles that can be separated from the subsidiary and sold should also be consolidated at fair value. For example, an acquired company might have a database containing extensive information about its customers. After purchasing the subsidiary, this information could be separated from that company and sold. Thus, on the date the subsidiary is purchased, the parent should recognize this database as an intangible asset at fair value to reflect the portion of the acquisition price paid to acquire it.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092909.html

Question: When one company buys another, payment amounts will likely be negotiated to compensate the seller for intangibles where contractual or legal rights are held or where the asset can be separated and then sold. Thus, parent companies who buy subsidiaries (especially in industries such as technology) will likely recognize significant intangible asset balances on the subsequently consolidated balance sheet.

However, some intangibles have value but fail to meet either of these two criteria. Customer loyalty, for example, is vitally important to the future profitability of a company, but neither contractual nor legal rights are present and loyalty cannot be separated from a company and sold. Hence, customer loyalty is not reported as an intangible asset despite its value. Much the same can be said for brilliant and creative employees. A value exists but neither rule for recognition is met.

The owners of a company that is being acquired will argue for a higher price if attributes such as these are in place because they provide for higher profitability in the future. The amount paid to obtain the subsidiary is impacted although these intangibles do not meet the criteria for separate reporting as assets. How is this additional acquisition cost reported by the parent in producing consolidated financial statements?

Assume Giant Corporation pays $16 million to acquire Tiny Corporation. The subsidiary (Tiny) owns property and equipment worth $4 million. It also holds patents worth $6 million, a database worth $2 million, and copyrights worth $3 million. The total value of those assets is only $15 million. For convenience, assume Tiny has no liabilities. Assume that the parent agrees to pay the extra $1 million because the subsidiary has customer loyalty valued at $600,000 and a talented workforce worth $400,000. How is this additional $1 million reported after the takeover?
What recording is made when a parent buys a subsidiary and pays an extra amount because intangibles are present that have value but do not meet the criteria for separate reporting?

Answer: Every subsidiary intangible (such as patents and databases) that meets either of the official criteria is consolidated by the parent at fair value. Any excess price paid over the total fair value of these recorded assets

(the extra $1 million in this question) is also reported as an asset. It has a cost and an expected future value. The term that has long been used to report an amount paid to acquire a company that exceeded all the identified and recorded assets is "goodwill." Some amount of goodwill is recognized as a result of most corporate acquisitions. In this example, it specifically reflects the value of the customer loyalty and the quality of the subsidiary's workforce.

If Giant pays $16 million for the stock of Tiny when its reportable assets have a value of only $15 million, the following entry is made by Giant to consolidate the two companies. As shown, the additional $1 million is labeled as goodwill, which will then be included within the intangible assets.

Figure 11.4 Giant Company Buys Tiny Company—$1 Million Paid over Fair Value of Assets

Property and Equipment	4,000,000	
Patents	6,000,000	
Database	2,000,000	
Copyrights	3,000,000	
Goodwill	1,000,000	
Cash		16,000,000

Question: In the above illustration, the parent paid this extra $1 million for specified intangibles. However, the customer loyalty and the talented workforce could not be recorded separately as assets because neither met the required criteria. Instead, a goodwill balance was created.

Is the reporting any different if the parent simply paid this amount as a result of serious negotiations? Assume, for example, that Giant agreed to the additional $1 million to obtain Tiny because that company's owners refused to sell for less. Giant believed that the $16 million price was still a good investment even though it required paying $1 million more than the value of the assets (tangible and intangible) that could be identified. If an acquiring company pays an additional amount to purchase a subsidiary without a specific rationale, is this cost still recorded as goodwill?

Answer: The acquisition of one company by another can require months of intense negotiations. One company wants to collect as much as possible; the other wants to pay as little as possible. Compromise is frequently necessary to arrive at a figure that both parties are willing to accept. In most cases, the new parent has to pay more than the sum of the value of all individual assets to entice the owners of the other company to sell.

Sometimes, as in the initial example with the customer loyalty and talented workforce, the reason for the added amount is apparent. More likely, the increased payment is simply necessary in order to make the deal happen. Because the extra amount is sacrificed to gain control of the subsidiary, it is still labeled by the parent as an asset known as goodwill. The rationale does not impact the accounting. Any extra acquisition price settled on to acquire a subsidiary appears in the parent's balance sheet as goodwill and is shown as an intangible asset.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092944.html

Question: Buildings, equipment, patents, databases, and the like all have costs that will be assigned to expense over an expected life as they help generate revenues. Goodwill is a different type of asset. It either represents a subsidiary attribute (such as customer loyalty) that is too nebulous to be recognized specifically as an intangible asset or an extra payment made by the parent as a result of the negotiation process. What happens to a cost labeled as goodwill after the date a subsidiary is acquired? How does Microsoft or Yahoo! account for their large goodwill balances over time? Is this asset like land that simply continues to be reported at historical cost potentially forever or, possibly, like equipment that is depreciated systematically over some anticipated useful life?

Answer: Because goodwill is the one asset on a balance sheet that is not tied to an identifiable benefit, no attempt is made to determine an anticipated life. Consequently, unlike most intangibles, the assigned cost is not amortized to expense. A goodwill balance can remain unchanged for decades after a subsidiary is purchased. However, the reported figure is reduced immediately if the value is ever judged to be impaired. Attributes such as customer loyalty or a talented workforce might continue in place for years or disappear in a short period of time. If goodwill is merely a premium paid to acquire a subsidiary, the justification for that excess amount could vanish quickly through poor management decisions or environmental factors. The value of all assets is tentative but probably none is more so than goodwill.

Although a cost recorded as goodwill is not amortized over time, its ongoing worth is not assumed. Instead, a test to check for any loss of that value is performed annually. This verification process is more complex than can be covered in an introductory course. The result, though, is important to understand. In the event goodwill has declined in value, an **impairment loss** is recorded to reduce the reported balance. Although not identical, the accounting is similar in some ways to the impairment test for land, buildings, and equipment demonstrated in the previous chapter.

In 2000, Time Warner and America Online (AOL) merged. Because of the perceived benefit of combing these two companies, a huge premium was paid and reported as goodwill on the consolidated balance sheet. Just two years later, it was obvious that the anticipated synergies from this transaction had not developed as expected. In simple terms, too much had been paid by the owners to create the merger. The value of the combined companies had not achieved their overly optimistic projections. Consequently, goodwill was reduced in 2002 by nearly $100 billion with a loss of that amount being reported by the consolidated company. The goodwill account was not amortized to expense but the eventual impairment had to be recognized.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092964.html

Key Takeaway

When a parent acquires another company, all intangibles held by that subsidiary must be identified and consolidated at fair value but only if either of two criteria are met. Recognizing these assets is necessary if legal or contractual rights are held or the intangible can be separated from the company and sold. Other amounts are often included in the acquisition price to compensate for identifiable intangibles (such as customer loyalty) that do not meet either of these criteria. Or an extra payment is necessary simply to entice the owner to sell. In either situation, this additional amount is reported as goodwill, an intangible asset that then appears on the consolidated balance sheet. Goodwill is not amortized over time but rather is checked periodically for impairment with a loss recognized if the value has declined.

11.4 Accounting for Research and Development

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Define the terms “research” and “development.”
2. Indicate the problem that uncertainty creates in reporting research and development costs.
3. Understand the method by which research and development costs are handled in financial accounting as has been established by U.S. GAAP.
4. Explain the advantages of handling research and development costs in the required manner.
5. Recognize that many companies will report asset balances that are vastly understated as a result of the official handling of research and development costs.

Question: Many companies create internally developed
intangibles such as copyrights and trademarks. As has been mentioned previously, the historical cost for such assets is often relatively small, almost inconsequential. However, monetary amounts spent to arrive at ideas that can be turned into new types of marketable products are often enormous. Such expenditures are essential to the future success of many companies. In 2008 alone, Intel reported spending $5.7 billion on **research** *and* **development** *in hopes of discovering new products to patent and sell. During the same one-year period, Bristol-Myers Squibb incurred costs of $3.6 billion on research and development. Those are clearly not inconsequential amounts. What is meant by the term “research”? What is meant by the term “development”? If a company such as Intel or Bristol-Myers Squibb spends billions on research and development each year, what accounting is appropriate? Should the company recognize an asset or an expense or some combination? The outcome is uncertain, but the money was spent under the assumption that future economic benefits would be derived.*

For example, assume that a technological company or a pharmaceutical company spends $1 million in Year One to do research on Future Product A. The company then spends another $1 million during the period on development costs for Future Product A. At the end of the year, officials believe that a patent is 80 percent likely for Future Product A. If received, sales can be made. During that time, the company also spends another $1 million in research and $1 million in development in connection with Future Product B. However, at year’s end, the same officials are less optimistic about these results. They believe that only a 30 percent chance exists that this second product will ever receive a patent so that it can be used to generate revenues. According to U.S. GAAP, what reporting is appropriate for the cost of these two projects?

Answer: Research is an attempt made to find new knowledge with the hope that the results will eventually be useful in creating new products or services or significant improvements in existing products or services. Development is the natural next step. It is the translation of that new knowledge into actual products or services

or into significant improvements in existing products or services. In simple terms, research is the search for new ideas; development is the process of turning those ideas into saleable products.

Reporting research and development costs poses incredibly difficult challenges for accountants. As can be seen with Intel and Bristol-Myers Squibb, such costs are often massive because of the importance of new ideas and products to the future of many organizations. Unfortunately, significant uncertainty is inherent in virtually all such projects. The probability of success can be difficult to determine for years and is open to manipulation for most of that time. Often the only piece of information that is known with certainty is the amount that has been spent.

Thus, except for some relatively minor exceptions, all research and development costs are expensed as incurred according to U.S. GAAP (FASB, 1974). The probability for success is not viewed as relevant to this reporting. Standardization is very apparent. All companies provide the same information in the same manner. The total cost incurred each period for research and development appears on the income statement as an expense regardless of the chance for success.

Consequently, the accounting for Future Product A and Future Product B is identical. Although one is 80 percent likely to be successful while the other is only 30 percent likely, the research and development expenditures for both are expensed as incurred. No asset is reported despite the possibility of future benefits. The rigidity of this rule comes from the inherent uncertainty as to whether revenues will ever be generated and, if so, for how long. Rather than trying to anticipate success, the conservatism found in accounting simply expenses all such costs. The percentages associated with the likelihood of receiving a patent and generating future revenues are ignored.

Two major advantages are provided by this approach. First, the amount spent on research and development each period is easy to determine and then compare with previous years and with other similar companies. Decision makers are quite interested in the amount invested in the search for new ideas and products. Second, the possibility for manipulation is virtually eliminated. No distinction is drawn between a likely success and a probable failure. No reporting advantage is achieved by maneuvering the estimation of a profitable outcome.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092945.html

Question: Companies spend billions of dollars on research and development each year in hopes of creating new products that can be sold in the future. This money would never be spent unless officials believed that a reasonable chance existed to recoup such huge investments. However, whether success is 100 percent likely or only 2 percent, no asset are reported on the balance sheet for these costs. Because all amounts spent on research and development are expensed automatically, are the assets reported by companies in industries such as technology and pharmaceuticals not omitting many of their most valuable future benefits? If a company spends $5 billion to develop a new drug or electronic device that becomes worth $8 billion, does reporting absolutely no asset make sense?

Answer: Even a student in an introductory accounting course can quickly recognize the problems created by a

rule requiring that all research and development costs be expensed as incurred. Technology, pharmaceutical, and many other companies must exclude items of significant value from their balance sheets by following U.S. GAAP. While this approach is conservative, consistent, and allows for comparability, the rationale is confusing. The balance sheet hardly paints a fair portrait of the underlying organization. Expensing research and development costs also violates the matching principle. These expenditures are made in the hopes of generating future revenues but the expense is recorded immediately.

Capitalizing these costs so that they are reported as assets is logical but measuring the value of future benefits is extremely challenging. Without authoritative guidance, the extreme uncertainty of such projects would leave the accountant in a precarious position. U.S. GAAP "solves" the problem by eliminating the need for any judgment by the accountant. All costs are expensed. No rule could be simpler to apply.

Consequently, any decision maker evaluating a company that invests heavily in research and development needs to recognize that the assets appearing on the balance sheet are incomplete. Such companies spend money to create future benefits that are not being reported. The wisdom of that approach has long been debated but it is the rule under U.S. GAAP. Difficult estimates are not needed and the possibility of manipulation is avoided.

Talking with an Independent Auditor about International Financial Reporting Standards (Continued)

Following is a continuation of our interview with Robert A. Vallejo, partner with the accounting firm PricewaterhouseCoopers.

Question: Virtually without exception, U.S. GAAP requires that all research and development expenditures must be expensed as incurred. This requirement has existed for over thirty years. Does IFRS handle research and development costs in the same manner?

Robert Vallejo: This is one of the best examples of differences between IFRS and U.S. GAAP. IFRS requires the capitalization of development costs. Guidelines do exist to help determine when a project moves from the research stage into the development stage. However, once the development stage commences, the costs have to be capitalized and amortized over the anticipated useful life. When companies first adopt IFRS, this will be a change that will require some effort, particularly if development costs are significant, and will have a substantial impact on reported net income.

The difference between U.S. GAAP and IFRS is not a question of right or wrong but rather an example of different theories colliding. U.S. GAAP prefers not to address the uncertainty inherent in research and development programs but rather to focus on comparability of amounts spent (between years and between companies). IFRS, on the other hand, views the failure by U.S. GAAP to recognize assets when future benefits are clearly present as a reporting flaw that should not be allowed.

Key Takeaway

Research and development costs include all amounts spent to create new ideas and then turn them into products that can be sold to generate revenue. Because success is highly uncertain, accounting has long faced the challenge of determining whether such costs should be capitalized or expensed. U.S. GAAP requires that all research and development costs (with a few minor exceptions) be expensed as incurred. This official standard prevents manipulation and allows decision makers to see the amount spent by management for this essential function. However, this method of

accounting means that companies (especially in certain industries) often fail to show some of their most valuable assets on their balance sheets.

References

FASB, "Accounting for Research and Development Costs," *Statement of Financial Accounting Standards No. 2*, October 1974. Within the new *Accounting Standards Codification*, information on the reporting of research and development can be found at FASB ASC 730-10.

11.5 Acquiring an Asset with Future Cash Payments

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Realize that if payments for an asset are delayed into the future, part of that cash amount is attributed to the purchase of the asset with the rest deemed to be interest.
2. Recognize that a reasonable rate of interest can be stated explicitly and paid when payment for a purchase is delayed so that no present value computation is needed.
3. Determine the allocation of cash flows between principal and interest using a present value computation when a reasonable interest rate is not paid.
4. Record the acquisition of an intangible asset when a present value computation has been required.
5. Define the term “compounding.”
6. Compute interest to be recognized each period when a transaction was recorded using a present value computation.
7. Understand the difference in an annuity due and an ordinary annuity.

Question: A company buys a patent from an inventor on January 1, Year One, for $1 million to be paid immediately. The accounting is straightforward; the patent is recognized as an intangible asset and reported at the historical cost of $1 million. Accounting rules are clear on the handling of such acquisitions.

Assume, instead, that the company offers to pay this $1 million but not until five years have passed. The seller agrees to that proposal. The purchase is made now but payment is delayed. Is the $1 million still being paid solely for the patent? Does the entire $1 million reflect the historical cost of this intangible? What reporting is appropriate if an asset such as a patent, building, or land is bought but payment will not take place for several years? How is historical cost determined?

Answer: Approximately forty years ago, the authoritative accounting body at the time ruled that when cash is paid for a purchase[1] over an extended period of time in the future, there are always two distinct reasons for the payments[2].

- The first is obviously the acquisition of the property such as the patent in this example.
- The second is **interest**. Interest is the charge for the use of money over time.

It was held to be unreasonable to believe that cash payments could be spread over several years without some interest charge being factored into the negotiated amounts. The accounting here is based on that assertion.

In many purchases, interest is explicitly stated. For example, the contract to buy this patent could have required payment of $1 million after five years plus interest at a 7 percent rate to be paid each year. Once again, the accounting is not complicated. The $1 million is the historical cost of the patent while the annual $70,000 payments ($1 million × 7 percent) are recorded each year by the buyer as interest expense. The two amounts are clearly differentiated in the terms of the agreement.

A problem arises if the interest is not explicitly identified in the contract. In the current illustration, the company agrees to make a single $1 million payment in five years with no mention of interest. According to U.S. GAAP, interest is still present because payment has been delayed. Official accounting rules hold that only part of the $1 million is actually paid for the patent with the rest serving as interest. The assertion stands: there is always a charge for using money over time. Payment has been deferred for five years; some part of that payment compensates the seller for having to wait for the money. Even if a rate is not mentioned, the assumption is made that interest for this period of time was taken into consideration when the $1 million figure was set.

However, the specific allocation of the $1 million between patent and interest is not readily apparent. To calculate the interest included within the price, an introduction to **present value** computations is necessary.

In simple terms, the present value of future cash flows is the amount left after all future interest is removed (hence the term “present value”).

The present value is the cost within the $1 million paid for the patent. The remainder—the interest—will be recognized as expense over the five-year period until payment is made.

To determine the present value of future cash flows, a reasonable interest rate is needed. Then, the amount of interest for these five years can be mathematically calculated. An appropriate interest rate is often viewed as the one the buyer would be charged if this money were borrowed from a local bank.

Assume here that 10 percent is a reasonable annual rate. Present value is then determined which is equal to the payment amount with all interest removed. The formula to determine the present value of $1 at a designated point in the future is $1 divided by (1 + i) raised to the n^{th} power with “n” being the number of periods and “i” the appropriate interest rate. In this case, because payment is due in five years, the present value $1 is $\$1/(1.10)^5$, or 0.62092. This factor can then be multiplied by the actual cash payment to determine its present value[3].

More simply put, if $1 is paid in five years for an asset and a reasonable rate of interest is 10 percent per year, then the $0.62 (rounded) present value is the portion being paid for the asset with the remaining $0.38 representing interest for those years. The present value computation mathematically determines the interest and then removes it to leave the cost of the asset.

Fortunately, present value tables are available as well as calculators and computer spreadsheets that make this computation relatively easy. On a present value table, the factor is found by looking under the specific interest rate column (10 percent) at the line for the number of applicable time periods (five).

Present Value of Single Amount of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvof1.htm

The present value today of paying $1 million in five years assuming a 10 percent annual interest rate is $1 million times 0.62092 or $620,920. This is the amount of the debt at the current moment (known as the principal) before any future interest is accrued over time. Mathematically, the interest for these five years has been computed and removed to arrive at this figure. It is the historical cost of the patent, the present value of the cash flows without any future interest. The remainder of the payment ($379,080) will be reported as interest expense by the buyer over the subsequent five years using a 10 percent annual rate. The total ($620,920 for the patent plus $379,080 interest) equals the $1 million payment.

The journal entries for Year One are as follows. The interest to be recognized for this first year is $62,092 or 10 percent of the principal balance for that year ($620,920)[4].

Figure 11.5 Present Value—Acquisition of Patent and Recognition of Year One Interest

1/1/1	Patent Note Payable	$620,920	 $620,920	($1,000,000 × .620920)
12/31/1	Interest Expense Note Payable	62,092	 62,092	(620,920 × .10)

Notice in the December 31 entry that no interest is actually paid on that date. Payment of this additional charge occurs in five years when the $1 million has to be paid and not just $620,920. Because interest was recognized in Year One but not paid, the amount of the liability (the principal) has grown. Increasing the debt to reflect the accrual of interest is referred to as “compounding.” Whenever interest is recognized but not paid, it is compounded which means that it is added to the principal of the liability.

In the second year, interest expense to be recognized is higher because the principal has increased from $620,920 to $683,012 ($620,920 plus $62,092) as a result of compounding the Year One interest. The ongoing compounding raises the principal each year so that the expense also increases.

Figure 11.6 Present Value—Recognition and Compounding of Interest[5]

12/31/2	Interest Expense Note Payable	$68,301	$68,301	(($620,920 + $62,092) × .10)
12/31/3	Interest Expense Note Payable	75,131	75,131	((683,012 + 68,301) × .10)
12/31/4	Interest Expense Note Payable	82,644	82,644	((751,313 + 75,131) × .10)
12/31/5	Interest Expense Note Payable	90,912	90,912	((826,444 + 82,644) × .10)
12/31/5	Note Payable Cash	1,000,000	1,000,000	

These journal entries show that three goals are achieved by the reporting.

- The patent is recorded at its historical cost of $620,920.
- The liability increases through compounding to $1 million as of its due date.
- Interest expense of $379,080 is recognized over the five-year period ($62,092 + $68,301 + $75,131 + $82,644 + $90,912). Although interest was not mentioned in the contract, U.S. GAAP requires it to be computed and reported over these five years.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092946.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092965.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092947.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092966.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092910.html

Question: Does the application of present value change substantially if cash is paid each year rather than as a lump sum at the end of the term? What reporting is appropriate if an intangible asset is purchased by making a down payment today followed by a series of payments in the future?

To illustrate, assume a company acquires a copyright from an artist by paying $10,000 on January 1, Year One, and promising an additional $10,000 at the beginning of each subsequent year with the final payment on January 1, Year Five. The total amount is $50,000. No separate interest is paid. What is the historical cost to be reported for this intangible asset and what interest should be recorded on the liability over these future years?

Answer: Although cash is conveyed over an extended period of time in this purchase, a reasonable rate of interest is not being explicitly paid. Thus, once again, a present value computation is necessary to pull out an appropriate amount of interest and leave just the cost of the asset. The present value of the payments (the principal) is the cash paid after all future interest is mathematically removed. That process has not changed. Here, cash is not conveyed as a single amount but rather as an **annuity**—an equal amount paid at equal time intervals. An annuity can be either an **ordinary annuity** with payments made at the end of each period or an **annuity due** with payments starting immediately at the beginning of each period.

The specific series of payments in this question creates an annuity due pattern because the first $10,000 is conveyed when the contract is signed. As before, a mathematical formula can be constructed to determine the applicable present value factor[6].

where i is the appropriate interest rate and n is the number of payment periods.The mathematical formula to determine the present value of an ordinary annuity of $1 per period ispresent value of an ordinary annuity = $(1 - 1/[1 + i]^n)/i$,

where i is the appropriate interest rate and n is the number of payment periods. Tables, a calculator, or a computer spreadsheet can also be used. If a reasonable rate is assumed to be 12 percent per year, the present value of a $1 per year annuity due of five periods with a rate of 12 percent is 4.0374[7].

Present Value of an Annuity Due of $1 per Period

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvforannuitydue.htm

Assuming a 12 percent annual interest rate, the present value of paying $10,000 annually for five years beginning immediately is $10,000 times 4.03735 or $40,374 (rounded). For annuities, the computation is constructed so that a single payment ($10,000) must be multiplied here rather than the total cash amount ($50,000). Of the total, $40,374 (the present value) is being paid for the copyright with the remaining $9,626 ($50,000 total cash less $40,374) representing the cost of interest over this period. To reiterate, the present value computation removes the interest from the total cash flow so that only the principal (the amount being paid for the asset) remains.

The initial journal entry to record this acquisition is as follows. Because no time has yet passed, interest is omitted.

Figure 11.7 Acquisition of Intangible Asset—Present Value of an Annuity Due

1/1/1	Copyright	40,374	
	Cash		10,000
	Note Payable		30,374

At the end of the first year, interest expense on the liability for the period must be recognized along with amortization of the cost of the copyright (assume a life of ten years and no residual value). The interest for the period is the $30,374 principal of the liability times the 12 percent reasonable rate or $3,645 (rounded). Because no interest is explicitly paid in this contract, all the interest is compounded. Amortization of the cost of the asset is $40,374 divided by ten years or $4,037.

Figure 11.8 Acquisition of Intangible Asset—Recognition of Interest and Amortization

12/31/1	Interest Expense	3,645	
	Note Payable		3,645
	Amortization Expense	4,037	
	Copyright		4,037

The next scheduled payment is made on January 1, Year Two and reduces the amount of the liability.

Figure 11.9 Payment at Start of Year Two

1/1/2	Note Payable	10,000	
	Cash		10,000

At the end of Year Two, both interest on the liability and amortization of the asset's cost must be recognized again to reflect the passage of another period. The amortization figure remains the same (assuming application of the

straight-line method) but interest must be recomputed. The principal was $30,374 for the first year but interest of $3,645 was then added to the liability at the end of that period followed by a $10,000 payment.

Figure 11.10 Computation of Liability Principal at End of Year Two

Liability Principal—January 1, Year Two ($30,374 plus Year One interest of $3,645)	$34,019
Payment on January 1, Year Two	(10,000)
Liability Principal—December 31, Year Two	$24,019

Thus, for the second year, the principal amount of the liability is $24,019 and the interest, at the reasonable rate of 12 percent, is $2,882 (rounded).

Figure 11.11 Recognition of Interest and Amortization for Year Two

12/31/2	Interest Expense	2,882	
	Note Payable		2,882
	Amortization Expense	4,037	
	Copyright		4,037

This pattern of entries will continue until the liability has been extinguished and the capitalized cost of the asset amortized completely to expense.

Key Takeaway

Companies often delay making cash payments for purchases for years. If interest is calculated and paid in the interim, the purchase price and the interest are easy to differentiate. The accounting is straightforward. However, if no interest payments are specified, a present value computation is made to separate the amount paid for the asset from the interest. The resulting amount (the present value) is recognized initially for both the asset and liability. Interest is recognized each period and compounded (added to the principal of the liability) since it is not paid at the time. Cash payments can be a single amount or an annuity (a stream of equal payments made at equal time intervals). An annuity can be an ordinary annuity (payments are made at the end of each period) or an annuity due (payments start immediately and are made at the beginning of each period).

Talking with a Real Investing Pro (Continued)

Following is a continuation of our interview with Kevin G. Burns.

Question: Goodwill is one of the most misunderstood balances on any set of financial statements. For example, at the end of 2008, Procter & Gamble reported goodwill of nearly $57 billion. Many serious investors probably are unsure of what to make of that number. How do you factor the reported balance for goodwill into your decision making?

Kevin Burns: I am not a big fan of goodwill. It is way too subjective and frankly I am not sure that it provides credible

information. How do you value something from an accounting standpoint that you cannot really measure or touch or feel? You cannot borrow against it. The goodwill balance is irrelevant for the kind of investing I do where I am more interested in asset values and what the real market values are for those assets. My feeling about goodwill is a bit like my feeling for financial footnotes. I prefer companies that can explain how they have value and make money without relying too much on either one.

Video Clip

" href="http://app.wistia.com/embed/medias/0b41cc223d" class="replaced-iframe">(click to see video)

Unnamed Author talks about the five most important points in Chapter 11 “In a Set of Financial Statements, What Information Is Conveyed about Intangible Assets?”.

[1]Similar rules apply when an asset is sold and the money is to be collected over a period of future years. For convenience, the illustrations in this chapter will focus on cash payments made in an acquisition.

[2]The Accounting Principles Board (APB) was the primary group in charge of creating U.S. GAAP from 1962 until 1973 when it was replaced by the Financial Accounting Standards Board (FASB). During those years, the APB produced thirty-one opinions. Its Opinion 21, “Interest of Receivables and Payables” was issued in August 1971 and established the rules described here. Within the new *Accounting Standards Codification*, information on the reporting of interest can be found at FASB ASC 835-30.

[3]In an Excel spreadsheet, the present value of $1 at 10 percent for five years can be derived by entering the following into a cell: =PV(.10,5,1,,0).

[4]The effective rate method of computing interest is demonstrated here. The principal balance is multiplied by the reasonable interest rate to get the amount of interest to be recorded each period. The effective rate method is the preferred approach according to U.S. GAAP. In Chapter 14 “In a Set of Financial Statements, What Information Is Conveyed about Noncurrent Liabilities Such as Bonds?”, an alternative method known as the straight-line method is also demonstrated. It is also allowed if the differences are not viewed as material.

[5]If the computations and entries are all correct, the liability will be $1 million at the end of five years. In the present value computation, the interest was removed at a 10 percent annual rate and then put back in each year through compounding at the same rate. Because some figures are rounded in these computations, the final interest amount may have to be adjusted by a few dollars to arrive at the $1 million total.

[6]The mathematical formula to determine the present value of an annuity due of $1 per period ispresent value of an annuity due = $[(1 – 1/[1 + i]^n)/i] \times (1 + i)$,

[7]On an Excel spreadsheet, the present value of a $1 per year annuity due for five periods at a reasonable rate of 12 percent is computed by typing the following data into a cell: =PV(.12,5,1,,1). If this had been an ordinary annuity because the initial payment was delayed until the end of the first period, present value of that $1 per year ordinary annuity is =PV(.12,5,1,,0).

11.6 End-of-Chapter Exercises

Questions

1. Define “intangible asset.”
2. Give three examples of intangible assets.
3. At what value are intangible assets typically reported?
4. How does an intangible asset differ from property and equipment?
5. What is amortization?
6. How does a company typically determine the useful life of an intangible?
7. Under what circumstances could the cost to defend an intangible asset in court be capitalized to the asset account?
8. Why are intangibles, like trademarks, not recorded at their market value, which can greatly exceed historical cost?
9. What are the two reasons intangible assets are reported at more than historical cost plus filing and legal costs?
10. When should a parent (acquiring) company record the intangibles of a subsidiary on its balance sheet?
11. What is “goodwill”?
12. Is goodwill amortized like other intangibles?
13. What should companies do with goodwill each reporting period?
14. Payments made over an extended period of time should be divided into what two items?
15. What is present value?
16. What is an annuity?

True or False

1. ____ Typically, intangible assets are shown at their fair value.
2. ____ A patent is an example of an intangible asset.
3. ____ Amortization of intangibles is usually done over the asset’s legal life.
4. ____ Once a company records goodwill, it will be on the company’s books forever because it is not amortized.
5. ____ If an intangible asset is successfully defended from a legal challenge, legal costs may be capitalized to the asset account.
6. ____ When one company acquires another, the acquiring company should continue to report any intangible assets of the purchased company at the same cost used by the purchased company.

7. ____ An intangible asset is a right that helps the owner generate revenues.
8. ____ Research and development costs that help develop successful programs can be capitalized.
9. ____ It is assumed that payments made on a long-term basis include interest.
10. ____ Intangibles purchased from another company are reported at the amount paid for them less any amortization.

Multiple Choice

1. Which of the following would not be subject to amortization?

    1. Goodwill
    2. Patent
    3. Copyright
    4. Trademark

2. Mitchell Inc. developed a product, spending $4,900,000 in research to do so. Mitchell applied for and received a patent for the product in January, spending $34,800 in legal and filing fees. The patent is valid for seventeen years. What would be the book value of the patent at the end of Year 1?

    1. $4,644,518
    2. $34,800
    3. $32,753
    4. $4,611,765

3. Kremlin Company pays $2,900,000 for the common stock of Reticular Corporation. Reticular has assets on the balance sheet with a book value of $1,500,000 and a fair value of $2,500,000. What is goodwill in this purchase?

    1. $1,400,000
    2. $1,000,000
    3. $400,000
    4. $0

4. What is the present value of receiving $4,800,000 at the end of six years assuming an interest rate of 5 percent?

    1. $3,581,834
    2. $6,432,459
    3. $5,040,000
    4. $4,571,429

5. Which of the following concerning the research and development costs is true?

    1. According to U.S. GAAP, research and development costs must be expensed as incurred.

2. Current U.S. GAAP reporting for research and development costs violates the matching principle.
3. International Financial Reporting Standards allow some development costs to be capitalized.
4. U.S. GAAP reporting for research and development costs is superior to international reporting.

6. Krypton Corporation offers Earth Company $800,000 for a patent held by Earth Company. The patent is currently on Earth Company's books in the amount of $14,000, the legal costs of registering the patent in the first place. Krypton had appraisers examine the patent before making an offer to purchase it, and the experts determined that it could be worth anywhere from $459,000 to $1,090,000. If the purchase falls through, at what amount should Earth Company now report the patent?

    1. $80,000
    2. $14,000
    3. $459,000
    4. $1,090,000

7. What is the present value of receiving $15,000 per year for the next six years at an interest rate of 7 percent, assuming payments are made at the beginning of the period (annuity due)?

    1. $76,503
    2. $90,000
    3. $59,971
    4. $9,995

Problems

1. At the beginning of the year, Jaguar Corporation purchased a license from Angel Corporation that gives Jaguar the right to use a process Angel created. The purchase price of the license was $1,500,000, including legal fees. Jaguar will be able to use the process for five years under the license agreement.

    1. Record Jaguar's purchase of the license.
    2. Record amortization of the license at the end of year one.
    3. What is the book value of the license reported on Jaguar's balance sheet at the end of Year One?

2. Yolanda Company created a product for which it was able to obtain a patent. Yolanda sold the patent to Christiana Inc. for $20,780,000 at the beginning of 20X4. Christiana paid an additional $200,000 in legal fees to properly record the patent. At the beginning of 20X4, Christiana determined that the patent had a remaining life of seven years.

    1. Record Christiana's purchase of the patent.
    2. Record amortization of the patent at the end of 20X4 and 20X5.
    3. What is the book value of the patent reported on Christiana's balance sheet at the end of 20X5?
    4. During 20X6, Christiana is sued by Bushnell Corporation, who claims that it has a patent on a product similar to the one held by Christiana and that Bushnell's patent was registered first. After a lengthy court battle, in December of 20X7, Christiana discovers that it has successfully

defended its patent. The defense of the patent cost Christiana $1,700,000 in legal fees. Record any necessary journal entries dealing with the court battle.

5. Christiana reaffirms that the patent has a remaining life of three years on December 31, 20X7. Record amortization expense on this date.
6. What is the book value of the patent reported on Christiana's balance sheet at the end of 20X7?

3. Star Corporation purchases Trek Inc. for $71,660,000. Star Corporation is gaining the following assets and liabilities:

	Value on Trek's Books	Current Market Value
Inventory	$456,000	$456,000
Land	$1,050,000	$50,000,000
Trademarks	$64,000	$20,004,000
Patent	$15,000	$1,850,000
Accounts Payable	$650,000	$650,000

Prepare the journal entry for Star to record the purchase of Trek.

4. Assume the same facts as in problem 3 above, but assume that Star pays $100,000,000 for Trek.

    1. When a purchasing company pays more than the fair market value of the assets of a company being acquired, what is this excess payment called?
    2. Why might Star be willing to pay more than $71,660,000 for Trek?
    3. Record the purchase of Trek by Star given this new purchase amount of $100,000,000.

5. Calculate the present value of each of the following amounts at the given criteria and then answer the questions that follow:

Future Cash Flow	Interest Rate	Number of Periods	Present Value
$400,000	4%	7 years	
$400,000	6%	7 years	
$400,000	4%	12 years	
$400,000	6%	12 years	

    1. Does the present value increase or decrease when the interest rate increases?
    2. Does the present value increase or decrease as the time period increases?

6. On 1/1/X6 Fred Corporation purchases a patent from Barney Company for $10,000,000, payable at the end of three years. The patent itself has an expected life of ten years. No interest rate is stated, but Fred could borrow that amount from a bank at 6 percent interest.

    1. Record the journal entry to record the patent on 1/1/X6.
    2. Record the journal entries to record interest expense and amortization expense on 12/31/X6, 12/31/X7, and 12/31/X8.

3. Record the journal entry to show that Fred pays off the note payable on 12/31/X8.

7. Calculate the present value of each of the following amounts at the given criteria. Assume that the payment is made at the beginning of the period (annuity due).

Payment per Period	Interest Rate	Number of Periods	Present Value
$30,000	5%	8 years	
$60,000	4%	7 years	
$25,000	8%	10 years	
$56,000	6%	4 years	

8. Highlight Company purchases the right to use a certain piece of music from the musician. It hopes to make this its "signature song" so it will be a long-term relationship, the contract stating five years. The agreed upon price is $750,000, with no stated interest rate. Highlight could borrow money at 5 percent interest currently. The arrangement states that Highlight will make a down payment on 1/1/X2 of $150,000, and pay $150,000 at the beginning of the following four years, making this an annuity due.

    1. Record the journal entry to record the copyright on 1/1/X2.
    2. Record the journal entries to record interest expense and amortization expense on 12/31/X2, 12/31/X3, 12/31/X4, and 12/31/X5.
    3. Record the journal entries to record the payments on 1/1/X3, 1/1/X4, 1/1/X5, and 1/1/X6.

Comprehensive Problem

This problem will carry through several chapters, building in difficulty. It allows students to continuously practice skills and knowledge learned in previous chapters.

In Chapter 10 "In a Set of Financial Statements, What Information Is Conveyed about Property and Equipment?", you prepared Webworks statements for October. They are included here as a starting point for November.

Figure 11.12 Webworks Financial Statements

Webworks
Income Statement
As of October 31

Revenue	$13,700
Cost of Goods Sold	(6,615)
Gross Profit	7,085
Depreciation Expense	(601)
Other Expenses	(3,590)
Earning before Tax	2,894
Tax Expense	(868)
Net Income	$2,026

Figure 11.13

Webworks
Stmt. of Retained Earnings
As of October 31

Retained Earnings, October 1	$4,645
Net Income	2,026
Retained Earnings, October 31	$6,671

Figure 11.14

Webworks
Balance Sheet
October 31

Assets		Liabilities	
Current		**Current**	
Cash	$1,532	Accounts Payable	$3,385
Accounts Receivable	1,450	Salaries Payable	100
Less Allowance for Doubtful Accounts	(145)		
Net Accounts Receivable	1,305		
Merchandise Inventory	1,470		
Supplies Inventory	50		
Prepaid Rent	400		
Total Current Assets	$4,757	Total Current Liabilities	$3,485
Noncurrent			
Equipment			
Less Accumulated Depreciation	$7,000		
Furniture	(584)		
Less Accumulated Depreciation	1,000		
	(17)		
Total Noncurrent Assets	$7,399		
		Owners' Equity	
		Capital Stock	$2,000
		Retained Earnings	6,671
		Total Owners' Equity	$8,671
		Total Liabilities & Owners' Equity	$12,156
Total Assets	$12,156		

The following events occur during November:

a. Webworks starts and completes eight more Web sites and bills clients for $4,600.

b. Webworks purchases supplies worth $80 on account.

c. At the beginning of November, Webworks had nine keyboards costing $110 each and forty flash drives costing $12 each. Webworks uses periodic FIFO to cost its inventory.

d. On account, Webworks purchases sixty keyboards for $111 each and ninety flash drives for $13 each.

e. Webworks pays Nancy $800 for her work during the first three weeks of October.

f. Webworks sells 60 keyboards for $9,000 and 120 flash drives for $2,400 cash.

g. A local realtor pays $400 in advance for a Web site. It will not be completed until December.

h. Leon read about a new program that could enhance the Web sites Webworks is developing for clients. He decides to purchase a license to be able to use the program for one year by paying $2,400 cash. This is called a "license agreement" and is an intangible asset.

i. Webworks collects $4,200 in accounts receivable.

j. Webworks pays off its salaries payable from November.

k. Webworks pays off $9,000 of its accounts payable.

l. Webworks pays Leon a salary of $2,000.

m. Webworks wrote off an uncollectible account in the amount of $100.

n. Webworks pays taxes of $1,135 in cash.

Required:

A. Prepare journal entries for the above events.

B. Post the journal entries to T-accounts.

C. Prepare an unadjusted trial balance for Webworks for November.

D. Prepare adjusting entries for the following and post them to your T-accounts.

o. Webworks owes Nancy $150 for her work during the last week of November.

p. Leon's parents let him know that Webworks owes $290 toward the electricity bill. Webworks will pay them in December.

q. Webworks determines that it has $20 worth of supplies remaining at the end of November.

r. Prepaid rent should be adjusted for November's portion.

s. Webworks is continuing to accrue bad debts at 10 percent of accounts receivable.

t. Webworks continues to depreciate its equipment over four years and its furniture over five years, using the straight-line method.

u. The license agreement should be amortized over its one-year life.

v. Record cost of goods sold.

E. Prepare an adjusted trial balance.

F. Prepare financial statements for November.

Chapter 12: In a Set of Financial Statements, What Information Is Conveyed about Equity Investments?

Video Clip

(click to see video)

Joe introduces Chapter 12 “In a Set of Financial Statements, What Information Is Conveyed about Equity Investments?” and speaks about the course in general.

12.1 Accounting for Investments in Trading Securities

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Realize that the reporting of investments in the ownership shares of another company depends on the purpose of the acquisition.
2. Explain the characteristics of investments that are classified as trading securities.
3. Account for changes in the value of investments in trading securities and understand the rationale for this handling.
4. Record dividends received from investments classified as trading securities.
5. Determine the gain or loss to be recorded on the sale of a trading security.

Question: Businesses frequently acquire ownership (equity) shares of other companies. On June 30, 2009, Microsoft disclosed that it held investments in the stock of other companies with a value of over $4.4 billion. During 2008, Mars Inc. offered to buy all the ownership shares of Wm. Wrigley Jr. Company for approximately $23 billion. The acquisition of Merrill Lynch by Bank of America made headlines around the world in the fall of 2008. The purchase of such shares offers many potential benefits. What are the most common reasons for one company to buy the ownership shares of another company?

Answer: Potentially, many benefits can accrue from obtaining shares of the stock issued by a business. The method of financial reporting applied by the owner depends on the purpose for holding such investments. Thus, the accounting process here is unique. The reporting of most assets does not vary significantly because of the rationale for making the purchase and retaining the property. In contrast, information about the ownership of the stock of another company is presented according to one of several methods based solely on the reason for the investment.

Companies frequently find that they are holding excess cash not needed at the moment for operating purposes. Traditional savings accounts or money market funds offer very low returns for this money. Company officials often seek a greater profit by using surplus cash to buy the ownership shares of other organizations. The hope is that the market price of these shares will appreciate in value and/or dividends will be received before the money is needed for operations. Such investments can be held for a few days (or even hours) or many years. Although earnings can improve through this strategy, the buyer does face additional risk. Share prices do not always go up; they can also decline resulting in losses for the investor.

When equity shares are bought solely as a way to store cash in a possibly lucrative spot, the investor has no

interest in influencing or controlling the decisions of the other company. That is not the reason for the purchase; the ownership interest is much too small.

Investors, though, may also embrace a strategy of acquiring enough shares to gain some degree of influence over the other organization. Often, profitable synergies can be developed by having two companies connected in this way. For example, at the end of 2008, The Coca-Cola Company (CCC) held approximately 35 percent of the outstanding stock of Coca-Cola Enterprises (CCE), its primary bottler and distributor. CCC does not own sufficient shares to **control** the operations of CCE but it certainly can apply significant influence if it so chooses.

Finally, as in the bid by Mars to acquire Wrigley, the investor may seek to obtain a controlling interest in the other company. In many cases, one company even acquires 100 percent ownership of the other. Such acquisitions are actually common as large companies attempt to move into new industries or geographical areas, become bigger players in their current markets, gain access to valuable assets, or simply eliminate competitors. Many smaller companies are started by entrepreneurs with the specific hope that success will eventually attract acquisition interest from a larger organization. Often, a significant profit can be earned by the original owners as a result of the sale of their company.

Question: There are clearly different reasons for buying stock. Assume that Valente Corporation is holding $25,000 in cash that it will not need for several weeks. The money is currently in a money market fund earning only a 1 percent annual rate of return. In hopes of generating a higher profit, the president of Valente has studied the financial statements of Bayless Corporation, a company with capital stock trading on the New York Stock Exchange (NYSE) for $25 per share. On November 30, Year One, the president believes that Bayless stock is primed to have a rather significant jump in market price in the near future. Consequently, Valente uses the $25,000 to acquire one thousand shares of stock in Bayless that will be held for only a few weeks or months. How does an owner report an equity investment that is bought with the expectation that the shares will be sold shortly after the purchase is made?

Answer: If management's intentions are to buy and sell the equity shares of another company in the near term, the purchase is classified on the balance sheet as an investment in **trading securities**. On the acquisition date, the asset is recorded by Valente at historical cost.

Figure 12.1 Purchase of Ownership Shares Classified as Trading Securities

As an owner, even for a short period of time, Valente might well receive a cash dividend from Bayless. Many companies distribute dividends to their stockholders periodically as a way of sharing a portion of any income that has been earned.

Assume that Bayless has been profitable and, as a result, a $0.20 per share cash dividend is declared by its board

of directors and paid in December. Valente receives $200 of this dividend ($0.20 per share × one thousand shares) which is reported as revenue on the company's income statement for this period.

Figure 12.2 Receipt of Dividend from Investment in Stock

Because of the short-term nature of this investment, Valente might sell these shares prior to the end of the year. The purchase was made anticipating a quick sale. A gain is reported if more than $25,000 is received while a loss results if the shares are sold for less than $25,000. As with dividend revenue, such gains and losses appear on the owner's income statement.

Accounting becomes more complicated if Valente continues to hold this investment at year end. Should equity shares held as a trading security be reported in the owner's financial statements at historical cost or current fair value? Which reporting is most helpful to outside decision makers?

U.S. GAAP requires investments in trading securities to be reported on the balance sheet at fair value. Therefore, if the shares of Bayless are worth $28,000 at December 31, Year One, Valente must adjust the reported value from $25,000 to $28,000 by reporting a gain.

Figure 12.3 Shares of Bayless (a Trading Security) Adjusted to Fair Value at End of Year

The gain here is labeled as "**unrealized**" to indicate that the value of the asset has appreciated but no final sale has yet taken place. The gain is not guaranteed; the value might go back down before the shares are sold. However, the unrealized gain is recognized and reported on the owner's Year One income statement.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092911.html

Question: The reporting demonstrated above for an investment in a trading security raises a question that has long been debated in financial accounting. Is recognizing a gain (or loss if the value had declined prior to the end of the year) on the owner's income statement appropriate if no actual sale has yet occurred? There is an important related question. In previous chapters, assets such as buildings, copyrights, and inventory were never adjusted to fair value unless an impairment had taken place. Why is an investment in a trading security recorded at fair value regardless of whether that value is above or below historical cost?

Answer: According to U.S. GAAP, changes in the value of trading securities are reported and the resulting gains or losses are shown within current net income for several reasons:

- The Bayless shares sell on a stock exchange and, thus, the reported value of $28,000 can be objectively determined. It is not an estimated amount subject to manipulation as is usually the case with assets such as buildings, copyrights, and inventory.
- The stock can be sold immediately; Valente does not have to find a buyer. The stock exchange provides a workable mechanism to create a sale whenever the owner makes that decision. No question exists that these shares can be liquidating at any time. Once again, the same assertion cannot be made for assets such as buildings, copyrights, and inventory.
- As a trading security, a sale is anticipated in the near term. The owner does not plan to hold the stock for a long period of time. Further changes in value can certainly take place but are less likely to be severe. The shortness of time prevents many radical fluctuations in value after the balance sheet date.

At year-end, this investment (as a trading security) will be reported on the investor's balance sheet at its fair value of $28,000. On the income statement, both the dividend revenue of $200 and the unrealized gain of $3,000 are shown as increases in net income.

If, instead, the fair value at year-end had been only $21,000, a $4,000 unrealized loss will appear on Valente's income statement to reflect the decline in value ($25,000 historical cost dropping to $21,000 fair value).

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092969.html

Question: In this ongoing illustration, Valente Corporation had bought one thousand shares of Bayless Corporation which it planned to sell in a relatively short period of time. On the last day of Year One, this trading security was adjusted from the historical cost of $25,000 to the fair value of $28,000. The $3,000 unrealized gain was reported within net income on the Year One income statement.

Assume that these shares are subsequently sold by Valente on February 3, Year Two, for $27,000. What reporting is appropriate when an investment in trading securities is sold in a subsequent period? What effect does this final transaction have on reported income?

Answer: Following the Year One adjustment, this investment is recorded in the general ledger at fair value of $28,000 rather than historical cost. Subsequently, when sold, any difference between the sales price and this carrying amount is recorded as a gain or a loss on the Year Two income statement.

Because the sales price of these shares ($27,000) is less than the reported balance ($28,000), recognition of a $1,000 loss is appropriate. This loss reflects the drop in value that took place during Year Two.

Figure 12.4 Sale of Shares of Bayless (a Trading Security) for $27,000 in Year Two

Cash	27,000	
Loss on Sale of Trading Investment	1,000	
Investment in Trading Securities		28,000

This investment was originally bought for $25,000 and eventually sold for $27,000 so an overall gain of $2,000 was earned. For reporting purposes, the income effect is spread between the two years of ownership. A gain of $3,000 was recognized in Year One to reflect the appreciation in value during that period. A loss of $1,000 is reported in Year Two because the stock price fell by $1,000 in that period prior to being sold.

Investments in trading securities are always shown on the owner's balance sheet at fair value. Gains and losses reported in the income statement parallel the movement in value that took place each period.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092949.html

Key Takeaway

Many companies acquire equity shares of other companies. The applicable accounting procedures depend on the purpose for the ownership. If the investment is only to be held for a short period of time, it is labeled a trading security and adjusted to fair value whenever financial statements are to be produced. Any change in value creates a gain or loss that is reported within net income because fair value is objectively determined, the shares can be liquidated easily, and a quick sale is anticipated before a large change in fair value is likely to occur. Dividends received by the owner are recorded as revenue. Whenever trading securities are sold, only the increase or decrease in value during the current year is reported within net income since earlier changes have already been reported in that manner.

12.2 Accounting for Investments in Securities That Are Available for Sale

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Identify the types of investments classified as available-for-sale.
2. Record the receipt of dividends from an investment that is viewed as available-for-sale.
3. Explain the handling of changes in the fair value of investments in available-for-sale securities.
4. Calculate the gain or loss to be reported when available-for-sale securities are eventually sold.
5. Understand the need for reporting comprehensive income as well as net income.
6. Explain the adjustment of net income utilized to arrive at comprehensive income.

Question: Not all investments in stock are bought for a quick sale. Assume Valente Corporation buys one thousand shares of Bayless Corporation for $25 in Year One but does not anticipate selling the investment in the near term. Company officials intend to hold these shares for the foreseeable future until the money is clearly needed. Although the stock could be sold at any time, the president of Valente believes this investment might well be retained for years. During Year One, a $200 cash dividend is received from the Bayless shares. At the end of that period, the stock is selling for $28 per share. How does the decision to hold equity shares for an extended period of time impact the financial reporting process?

Answer: Because Valente's intention is to retain these shares for an indefinite period, they will be classified on the company's balance sheet as an investment in **available-for-sale securities** rather than as trading securities. Despite the difference in the plan for these shares, they are—once again—recorded at historical cost when acquired.

Figure 12.5 Purchase of Ownership Shares Classified as Available-for-Sale Securities

Investment in Available-for-Sale Securities	25,000	
Cash		25,000

The receipt of the dividend is also reported in the same manner as before with the dividend revenue increasing Valente's net income.

Figure 12.6 Receipt of Dividend from Investment in Stock

Cash	200	
Dividend Revenue		200

The difference in reporting begins at the end of the year. U.S. GAAP requires available-for-sale investments to be included on the investor's balance sheet at fair value (in the same manner as trading securities). As before, this adjustment to fair value creates an unrealized gain of $3,000. However, reported net income is not affected as it was with the investment in the trading security.

Figure 12.7 Shares of Bayless (an Available-for-Sale Security) Adjusted to Fair Value at End of Year

Investment in Available-for-Sale Securities	3,000	
Unrealized Gain on Available-for-Sale Securities		3,000

Question: An immediate question is obvious: If not presented on the income statement, how is the $3,000 unrealized gain in the value of this investment shown by the owner?
How are changes in the value of available-for-sale securities reported?

Answer: Because no sale is expected in the near term, the fair value of available-for-sale shares will possibly go up and down numerous times before being sold. Hence, the current gain is not viewed as "sure enough." As a result of this uncertainty, a change in the owner's reported net income is not considered appropriate. Instead, any unrealized gain (or loss) in the value of an investment that is classified as available-for-sale is reported within the stockholders' equity section on the balance sheet. The figure is listed either just above or below the retained earnings account. A few other unrealized gains and losses are handled in this manner and are usually combined and reported as "**other accumulated comprehensive income**."

Figure 12.8 Stockholders' Equity Including Other Accumulated Comprehensive Income

Contributed Capital (or Capital Stock)	XXX
Retained Earnings	XXX
Other Accumulated Comprehensive Income:	
Unrealized Gain on Available-for-Sale Securities	3,000

- Changes in the value of trading securities create unrealized gains or losses that are reported in the income statement.
- Changes in the value of available-for-sale securities also create unrealized gains and losses but they are shown in stockholders' equity and not net income.

The above procedures were first created in 1993 and have been used since that time. Interestingly, in 2007, FASB

passed a rule that allows companies to elect to report available-for-sale investments in the same manner as trading securities. This option must be selected when the investment is purchased. Thus, if that election is made, the $3,000 unrealized gain above is reported on the income statement despite the intention to hold the securities for an indefinite period. This is another example of accounting rules that are not as rigid as sometimes perceived.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092972.html

Question: Assume that Valente has chosen not to report the above available-for-sale investment in the same manner as a trading security but rather by means of the traditional approach. Thus, the $3,000 unrealized gain created by the appreciation of value is reported within stockholders' equity at the end of Year One. Subsequently, in Year Two, these shares are sold on the stock exchange for $27,000. What reporting is made at that time? How is the eventual sale of investments that are classified as available-for-sale securities reported?

Answer: When available-for-sale securities are sold, the difference between the original cost ($25,000) and the selling price ($27,000) is reported as a realized gain (or loss) on the income statement. Because no change in net income was reported in the previous year, this entire amount has to be reported at the date of sale. Having put the unrealized gain into stockholders' equity in Year One means that the change in value only touches net income when sold.

However, mechanical complexities now exist. The investment has been adjusted to a $28,000 carrying amount and a $3,000 unrealized gain is still reported within stockholders' equity. As a balance sheet account, this $3,000 figure is not closed out at the end of Year One. When the investment is sold, both the $28,000 asset and the $3,000 unrealized gain must be removed. The net amount mirrors the $25,000 historical cost of these shares. By eliminating the previous gain in this manner, the asset is brought back to the original $25,000. Thus, the appropriate realized gain of $2,000 is recognized: the shares were bought for $25,000 and sold for $27,000.

Figure 12.9 Sale of Available-for-Sale Security in Year Two

Cash	27,000	
Unrealized Gain on Available-for-Sale Securities	3,000	
Investment in Available-for-Sale Securities		28,000
Gain on Sale of Available-for-Sale Investment		2,000

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092950.html

Question: In Year One, Valente's investment in the shares of Bayless Corporation rose in value by $3,000. If those investments are classified as available-for-sale, this unrealized gain does not impact reported net income but, rather, stockholders' equity. This handling is justified because the investor will not necessarily sell these shares in the near future so that numerous subsequent changes in value are likely to take place.

However, net income seems a bit misleading since it does not reflect the increase in the reported worth of this asset. Assume, for example, that Valente reports total net income for Year One of $80,000. That figure includes no part of the $3,000 unrealized gain. What reporting is necessary to help investors understand the impact on income of a change in value when investments are labeled as available-for-sale?

Answer: Indeed, the completeness of reported net income in such situations can be questioned. As noted, changes in the value of available-for-sale securities create unrealized gains or losses that appear in the stockholders' equity section of the balance sheet but not in net income. To help decision makers better evaluate the reporting company, a second income figure is disclosed that does include these gains or losses. The resulting balance is known as **comprehensive income**. It can be shown on the bottom of a company's income statement or in a separate schedule. Here, by adding in the $3,000 change in fair value, Valente's net income figure is adjusted to the more complete total.

Figure 12.10 Net Income Converted to Comprehensive Income

Net Income	$80,000
Unrealized Gain in Available-for-Sale Securities	3,000
Comprehensive Income	$83,000

Decision makers can choose to emphasize one figure (net income) or another (comprehensive income) in their analysis of the reporting company. More appropriately, they can view the two figures as simply different ways to portray the results of the current year and make use of both.

Comprehensive income includes all changes in stockholders' equity other than (a) amounts contributed by stockholders and (b) dividend distributions made to stockholders. Unrealized gains and losses on available-for-sale securities are common but several other unrealized gains and losses are also included in moving from net income to comprehensive income.

For example, for the year ended December 31, 2008, Yahoo! Inc. reported its net income as approximately $424 million. However, the company also disclosed comprehensive income of only $213 million. The $211 million reduction was caused by including gains and losses that resulted from (a) changes in value of available-for-sale securities and (b) translation changes in currency exchange rates reported by subsidiaries operating in foreign countries. According to U.S. GAAP, these gains and losses were not deemed appropriate for inclusion in net income and, instead, were shown in stockholders' equity. However, interested parties can still see their impact on income as reflected in the comprehensive income figure.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092951.html

Key Takeaway

Investments in equity securities are often held by the owner for an indefinite period of time. As such, the asset is classified as available-for-sale and shown at fair value each period. Any changes in the reported amount is not included in net income but is rather listed within other accumulated comprehensive income in the stockholders' equity section of the balance sheet. However, dividends received from the investment are reported as revenue and include in net income. When eventually sold, the difference between original cost and the proceeds received is reported as a gain or loss shown within net income. Because periodic changes in value are not factored into the calculation of net income, they are included in determining comprehensive income. Thus, both net income and comprehensive income are reported to allow decision makers to better understand the impact of these unrealized gains and losses.

12.3 Accounting for Investments by Means of the Equity Method

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Describe the theoretical criterion for applying the equity method to an investment in stock and explain the alternative standard that is often used.
2. Compute the amount of income to be recognized under the equity method and make the journal entry for its recording.
3. Understand the handling of dividends that are received when the equity method is applied and make the related journal entry.
4. Indicate the impact that a change in fair value has on the reporting of an equity method investment.
5. Prepare the journal entry to record the sale of an equity method security.

Question: Not all investments in corporate stock are made solely for the possibility of gaining dividends and share price appreciation. As mentioned earlier, The Coca-Cola Company holds 35 percent ownership of Coca-Cola Enterprises. The relationship between that investor and investee is different. The investor has real power; it can exert some amount of authority over the investee. The Coca-Cola Company owns a large enough stake in CCE so that operating and financing decisions can be influenced. When one company holds a sizable portion of another company, is classifying and accounting for the investment as an available-for-sale or trading security a reasonable approach?

Answer: The answer to this question depends on the size of ownership. As the percentage of shares grows, the investor gradually moves from having little or no authority over the investee to a position where significant influence can be exerted. At that point, the investment no longer qualifies as a trading security or an available-for-sale security. Instead, the shares are reported by means of the **equity method**. The rationale for holding the investment has changed.

The equity method views the relationship of the two companies in an entirely different fashion. The accounting process applied by the investor must be altered. Consequently, a note to the 2008 financial statements prepared by The Coca-Cola Company states, “We use the equity method to account for our investments for which we have the ability to exercise significant influence over operating and financial policies. Consolidated net income includes our Company’s proportionate share of the net income or net loss of these companies.”

The equity method is applied when the investor has the ability to apply significant influences to the operating and financing decisions of the investee. Unfortunately, the precise point at which one company gains that ability is impossible to ascertain. A bright line distinction simply does not exist. Although certain clues such as membership

on the board of directors and the comparative size of other ownership interests can be helpful, the degree of influence is a nebulous criterion. When a question arises as to whether the ability to apply significant influence exists, the percentage of ownership can be used to provide an arbitrary standard.

According to U.S. GAAP, unless signs of significant influence are present, an investor owning less than 20 percent of the outstanding shares of another company reports the investment as either a trading security or available-for-sale security. In contrast, an investor holding 20 percent or more but less than or equal to 50 percent of the shares of another company is assumed to possess the ability to exert significant influence. Unless evidence is present that significant influence does not exist, the equity method is applied by the investor to report all investments in this 20–50 percent range of ownership.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092970.html

Question: One company holds shares of another and has the ability to apply significant influence so that the equity method of accounting is appropriate. What reporting is made of an investment when the equity method is used? What asset value is reported on the owner's balance sheet and when is income recognized under this approach?

Answer: When applying the equity method, the investor does not wait until dividends are received to recognize profit from its investment. Because of the close relationship, the investor reports income as it is earned by the investee. If, for example, a company reports net income of $100,000, an investor holding a 40 percent ownership immediately records an increase in its own income of $40,000 ($100,000 × 40 percent). In recording this income, the investor also increases its investment account by $40,000 to reflect the growth in the size of the investee company.

Income is recognized by the investor immediately as it is earned by the investee. Thus, it cannot be reported again when a subsequent dividend is collected. That would double-count the impact. Income must be recognized either when earned by the investee or when later distributed to the investor, but not at both times. The equity method uses the earlier date rather than the latter. Eventual payment of a dividend shrinks the size of the investee company. Thus, the investor decreases the investment account when a dividend is received if the equity method is applied. No additional income is recorded.

Companies are also allowed to report such investments as if they were trading securities. However, few have opted to make this election. If chosen, the investment is reported at fair value despite the degree of ownership with gains and losses in the change of fair value reported in net income.

Question: In applying the equity method, income is recognized by the investor when earned by the investee. Subsequent dividend collections are not reported as revenue by the investor but rather as a reduction in the size of the investment account to avoid including the income twice.

To illustrate, assume that Big Company buys 40 percent of the outstanding stock of Little Company on January 1, Year One, for $900,000. No evidence is present that provides any indication that Big lacks the ability to exert significant influence over the financing and operating decisions of Little. Thus, application of the equity method is appropriate. During Year One, Little reports net income of $200,000 and pays a total cash dividend to its stockholders of $30,000. What recording is appropriate for an investor when the equity method is applied to an investment?

Answer: The purchase of 40 percent of Little Company for cash is merely the exchange of one asset for another. Thus, the investment is recorded initially by Big at its historical cost.

Figure 12.11 Acquisition of Shares of Little to Be Reported Using the Equity Method

Ownership here is in the 20 to 50 percent range and no evidence is presented to indicate that the ability to apply significant influence is missing. Thus, according to U.S. GAAP, the equity method is applied. Big recognizes its portion of Little's $200,000 net income as soon as it is earned by the investee. As a 40 percent owner, Big accrues income of $80,000. Because earning this income caused Little Company to grow, Big increases its investment account to reflect the change in the size of the investee.

Figure 12.12 Income of Investee Recognized by Investor Using the Equity Method

Big has recognized the income from this investee as it was earned. Consequently, any eventual dividend received from Little is a reduction in the investment in Little account rather than a new revenue. The investee company is smaller as a result of the cash payout. The balance in this investment account rises when the investee reports income but then falls (by $12,000 or 40 percent of the total distribution of $30,000) when that income is later passed through to the stockholders.

Figure 12.13 Dividend Received from Investment Accounted for by the Equity Method

On Big's income statement for Year One, investment income—Little is shown as $80,000. Because the equity method is applied, the reader knows that this figure is the investor's ownership percentage of the income reported by the investee.

At the end of Year One, the investment in Little account appearing on Big's balance sheet reports $968,000 ($900,000 + 80,000 – 12,000). This total does not reflect fair value as with investments in trading securities and available-for-sale securities. It also does not disclose historical cost. Rather, the $968,000 asset balance is the original cost of the shares plus the investor's share of the investee's subsequent income less any dividends received. Under the equity method, the asset balance is a conglomerate of numbers.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092971.html

Question: Assume, at the end of Year One, after the above journal entries have been made, Big sells all of its shares in Little Company for $950,000 in cash. When the equity method is applied to an investment, what is the appropriate recording of an eventual sale?

Answer: An investment reported using the equity method quickly moves away from historical cost as income is earned and dividends received. After just one year, the asset balance reported above by Big has risen from $900,000 to $968,000 (income of $80,000 was added and $12,000 in dividends were subtracted). If these shares are then sold for $950,000, a loss of $18,000 is recognized.

Figure 12.14 Sale of Investment Reported Using the Equity Method

Cash	950,000	
Loss on Sale of Equity Method Securities	18,000	
Investment in Little		968,000

If these shares had been sold for more than their $968,000 carrying value, a gain on the sale is recorded.

Summary. All investments in the stock of another company—where ownership is no more than 50 percent—must be accounted for in one of three ways depending on the degree of ownership and the intention of the investor.

Figure 12.15 Comparison of Three Methods to Account for Investments

	Investment in Trading Securities	Investment in Available for Sale Securities	Investment—Equity Method
Primary Characteristic	Expected to be sold in near term	Will be sold when cash is eventually needed	Investor has ability to apply significant influence (usually shown by 20% to 50% ownership)
Reported Investment Balance	Fair value	Fair value(*)	Cost plus portion of income less portion of dividends(*)
Changes in Fair Value	Included in net income	Included within stockholders' equity and then within comprehensive income	Ignored unless permanent drop in value occurs
Amounts Reported within Investor's Net Income	Dividends received plus change in fair value	Dividends received	Portion of income as earned by Investee
Dividends Received	Included in net income	Included in net income	Reduces investment balance

*At the time of acquisition, an investor has the option of accounting for investments that are available for sale or investments where the ability to apply significant influence is present by the same method as that used for trading securities.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092992.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093013.html

Key Takeaway

At some point, an owner can gain enough equity shares of another company to have the ability to apply significant influence. Use of the equity method then becomes appropriate. Significant influence is difficult to gauge so ownership of 20–50 percent of the outstanding stock is the normal standard applied in practice. However, if evidence is found indicating that significant influence is either present or does not exist, that takes precedence regardless of the degree of ownership. Under the equity method, income is recognized by the investor as soon as earned by the investee. The investment account also increases as a result of recognizing this income. Conversely, dividends are not reported as income but rather as reductions in the investment balance. Unless a permanent decline occurs, fair value is not taken

into consideration in accounting for an equity method investment. When sold, the book value of the asset is removed so that any difference with the amount received can be recognized as a gain or loss.

12.4 The Reporting of Consolidated Financial Statements

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. List various reasons for one company to seek to gain control over another.
2. Recognize that consolidated financial statements must be prepared if one company has control over another which is normally assumed as the ownership of any amount over 50 percent of the company's outstanding stock.
3. Explain the reporting of a subsidiary's revenues and expenses when consolidated financial statements are prepared at the date of acquisition.
4. Explain the reporting of a subsidiary's assets and liabilities when consolidated financial statements are prepared at the date of acquisition.
5. Determine consolidated totals subsequent to the date of acquisition.
6. Compute total asset turnover and return on assets (ROA).

Question: Many companies buy more than 50 percent of the stock of other companies in order to gain control. In a large number of these acquisitions, one company obtains all the outstanding shares of the other so that ownership is complete. If two companies are brought together to form a third, a merger has taken place. If one company simply buys another, the transaction is known as an acquisition. Thomson Financial reported that approximately 35,000 mergers and acquisitions took place around the world during 2006 with a total value of $3.5 trillion. The recent recession has reduced that trend a bit.

Such investments are often made to expand operations into new markets or new industries. Google, for example, acquired YouTube for $1.65 billion to move into the presentation of online videos. As discussed earlier in the coverage of intangible assets, one company might buy another to obtain valuable assets such as patents, real estate, trademarks, technology, and the like. Walt Disney's purchase of Pixar and its digital animation expertise appears to fall into this category. Such transactions can also be made to eliminate competition or in hopes of gaining economies of scale. Sprint's $35 billion merger with Nextel was projected to increase profits for the combined companies by lowering operating expenses while also reducing the number of competitors in the wireless communication industry.

To help explain the appropriate method of accounting for such investments, assume that Giant Company acquires 100 percent of Tiny Company. Obviously, control has been obtained. How is the reporting by Giant affected? Because over 50 percent of the stock was purchased, none of the previously described accounting methods are applicable. How does a company report the acquisition of another company where control is established?

Answer: According to U.S. GAAP, control is gained by the acquisition of over 50 percent of the voting stock of a company. The stockholders of Giant now control both Giant and Tiny. As a result, a business combination has been formed from the two previously independent companies. For external reporting purposes, **consolidated financial statements** are required. Giant does not report an investment in Tiny account on its balance sheet as with the other methods described above. Instead, in consolidation, the individual account balances from each organization are put together in a prescribed fashion to represent the single economic entity that has been created. In simple terms, the assets, liabilities, revenues, and expenses of Tiny (the subsidiary) are consolidated with those of Giant (the parent) to reflect the united business.

Because such acquisitions are common, the financial statements reported by many well-known corporations actually include consolidated financial data from hundreds of different subsidiaries where control has been gained over a number of years. As just one example, Cisco Systems made approximately sixty acquisitions of other companies between 2000 and 2007. Subsequently, the published financial statements for Cisco Systems included the revenues, expenses, assets, and liabilities of each of those subsidiaries.

Consolidation of financial statements is one of the most complex topics in all of financial accounting. However, the basic process is quite straightforward.

Subsidiary revenues and expenses. The revenues and expenses of each subsidiary are included in consolidated figures but only for the period after control is gained. Consequently, if Giant obtains Tiny by buying 100 percent of its stock on April 1, a consolidated income statement for these two companies will contain no revenues and expenses recognized by Tiny prior to that date. Income statement balances accrued under previous owners have no financial impact on the new owner, Giant. Only the revenues and expenses of this subsidiary starting on April 1 are included in the consolidated totals calculated for Giant Company and its consolidated subsidiary.

Subsidiary assets and liabilities. Consolidation of subsidiary assets and liabilities is a more complicated process. On the date of the takeover, a total acquisition price is determined based on the fair value surrendered by the parent in order to gain control. A search is then made to identify all the individual assets and liabilities held by the subsidiary at that time. As discussed in the previous chapter, the parent recognizes all subsidiary assets (1) that provide contractual or legal rights or (2) in which the asset can be separated and then sold. Fair value is established and recorded for each as if the parent were acquiring them individually. A transaction has taken place that brings all of those subsidiary assets and liabilities under the control of the parent company. Consolidation values are reported as if they were bought separately by the parent.

Also, as explained previously, if the acquisition price is more than the total fair value of all these identifiable assets and liabilities, the intangible asset goodwill is reported for the difference. As a going concern, a total value is usually attributed to a company that exceeds the individual values of its assets and liabilities. Having loyal customers and trained employees, for example, helps a company generate more profits than its assets could otherwise earn. When a company is being bought, such anticipated profitability usually leads to an increase in the negotiated price. This excess amount necessitates the recognition of goodwill on the consolidated balance sheet.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092973.html

Question: To illustrate the consolidation process, assume that Tiny has earned revenues of $800,000 and incurred expenses of $500,000 during the year to date. In addition, the company reports a single asset, land costing $400,000 but with a $720,000 fair value. The only liability is a $300,000 note payable. Thus, the company's net book value is $100,000 ($400,000 land less $300,000 note payable). Tiny also owns the rights to a well-known trademark that has no book value because it was developed many years ago at little or no cost. However, it is now estimated to be worth $210,000.

The assets and liabilities held by Tiny have a net fair value of $630,000 ($720,000 land plus $210,000 trademark less $300,000 note payable). Because the company has been extremely popular and developed a large customer base, Giant agrees to pay $900,000 to acquire all the outstanding stock. If consolidated financial statements are created at the time of a corporate acquisition, what figures are reported by the business combination?

Answer: In consolidating Giant and its subsidiary Tiny at the date of this acquisition, neither the subsidiary revenues of $800,000 nor its expenses of $500,000 are included. Their financial impact occurred prior to the takeover by Giant; those profits benefitted the previous owners. Therefore, only the revenues and expenses reported by Giant make up consolidated income statement totals determined on the day the parent acquires the subsidiary.

At the same time, consolidated balance sheet totals will not show any "investment in Tiny Company" as in the other methods demonstrated above. Instead, Tiny's land is added to Giant's own totals at its $720,000 fair value. The trademark is consolidated at $210,000 to reflect the amounts paid by Giant to acquire ownership of the subsidiary. The note payable is added to the consolidated figures at $300,000, which was its fair value as well as its book value. Subsidiary assets and liabilities are included in consolidated totals as if purchased by the parent. Mechanically, a $320,000 increase is made to the land account while $210,000 is recorded to recognize the value of the trademark.

The acquisition price of $900,000 paid by Giant exceeds the net value of the subsidiary's identifiable assets and liabilities ($610,000) by $290,000. In consolidation, any excess acquisition payment is assumed to represent goodwill and is reported as an intangible asset.

Figure 12.16 Consolidated Totals—Date of Acquisition

Revenues	Parent total only
Expenses	Parent total only
Net Income	Parent total only
Reported Assets and Liabilities	Parent book value plus fair value of subsidiary accounts
Trademark (previously unreported)	Fair value of subsidiary account
Investment in Tiny	Not reported for consolidation—actual assets and liabilities are included instead
Goodwill	Excess payment made to acquire subsidiary
Liabilities	Parent book value plus fair value of subsidiary figures
Stockholders' Equity	Parent total only

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093014.html

Question: On the date of acquisition, subsidiary revenues and expenses are omitted from consolidation totals but assets and liabilities are included at fair value. Any excess payment made by the parent in purchasing the subsidiary is reported as goodwill. In subsequent consolidations, what accounting is made of the subsidiary's revenues, expenses, assets, and liabilities?

Answer: For subsequent balance sheets created after a business combination is formed, the book value of each of the subsidiary's assets and liabilities is added to the book value of those same accounts within the parent's financial records. However, the initial adjustments made at the date of acquisition to establish fair value must continue to be included because they represent a cost incurred by Giant when the $900,000 payment was made to acquire Tiny Company.

Thus, in future consolidations of these two companies, the $320,000 adjustment recorded to the land account will be present as will the $210,000 portion of the payment assigned to the subsidiary's trademark and the $270,000 goodwill balance. Those costs were not recognized by Tiny but were incurred by Giant at the time of acquisition and must be reflected in the ongoing reporting of those assets.

Recognition of these subsequent adjustments creates one final concern. A trademark has a finite life. Thus, the $210,000 cost paid by the parent and attributed to this asset must be amortized over time. This additional expense is only recognized in the consolidation process since it relates to the purchase of Tiny and not to the operations of either company. Neither land nor goodwill has a finite life so amortization is not appropriate for those purchase price adjustments. As discussed previously, these assets are checked periodically for impairment of value.

Subsequently consolidated income statements report the parent's revenues and expenses plus subsidiary amounts but only those recognized since the acquisition. In addition, the amortization of acquisition cost adjustments, such as for the trademark, will be recognized within the consolidation as an expense.

Figure 12.17 Consolidated Totals—Subsequent to Date of Acquisition

Revenues	Parent total plus subsidiary total for the period
Expenses	Parent total plus subsidiary total for the period plus amortization of fair value adjustments (such as for trademark)
Net Income	Consolidated revenues minus consolidated expenses
Reported Assets and Liabilities	Parent book value plus book value of subsidiary accounts plus fair value adjustment less amortization
Trademark (previously unreported)	Fair value adjustment less amortization
Investment in Tiny	Not reported for consolidation—actual assets and liabilities are included instead
Goodwill	Excess payment made to acquire subsidiary remains unchanged unless value is impaired
Stockholders' Equity	Parent total only

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093016.html

Question: Chapter 12 "In a Set of Financial Statements, What Information Is Conveyed about Equity Investments?" completes coverage of the assets reported by a company on its balance sheet. In earlier chapters on receivables, inventory, and property and equipment, vital signs were computed and explained as figures and ratios often used in evaluating a company—especially its financial health and future prospects. Do any similar vital signs exist for assets as a whole that decision makers typically use as part of an overall evaluation?

Answer: A company controls a specific amount of assets. Most investors and other decision makers are interested in how effectively management was able to use these resources. Individuals who study companies search for signs that an appropriate level of income was generated from the assets on hand.

Total asset turnover. **Total asset turnover** is one such figure. It simply indicates management's efficiency at generating sales. Sales must occur before profits can be earned from normal operations. If assets are not well used to create sales, profits will probably never arise.

total asset turnover = sales revenue/average total assets

For example, here is information reported for 2008 by PepsiCo Inc. and The Coca-Cola Company. Based on this information, the total asset turnover can be computed for each company.

Figure 12.18 2008 Comparison of PepsiCo Inc. and The Coca-Cola Company

	PepsiCo	Coca-Cola
Total Assets		
Beginning of Year	$34.6 billion	$43.3 billion
End of Year	36.0 billion	40.5 billion
Average for Year	35.3 billion	41.9 billion
Net Sales Revenue	43.3 billion	31.9 billion
Total Asset Turnover	1.23 times	.76 times

Return on assets. Probably one of the most commonly used vital signs employed in studying the financial health of a company is **return on assets**, often known as ROA. It is simply net income divided by average total assets and is viewed by many as an appropriate means of measuring management's efficiency in using company resources.

return on assets (ROA) = net income/average total assets

Some analysts modify the income figure in this computation by removing interest expense to eliminate the impact of different financing strategies.

For 2008, PepsiCo reported net income of $5.1 billion so that its ROA for the year was 14.4 percent ($5.1 net income/$35.3 average total assets). For the same period, The Coca-Cola Company reported net income of $5.8 billion for an ROA of 13.8 percent ($5.8/$41.9).

Key Takeaway

Companies often attempt to obtain control over other companies for many reasons including gaining access to valuable assets and eliminating competition. According to U.S. GAAP, control is established by acquiring over 50 percent of the ownership shares. At that point, consolidated financial statements must be prepared bringing together the financial accounts from both companies. For the subsidiary, only revenues and expenses since the takeover are included. In consolidating the assets and liabilities of the subsidiary, any difference on the date of acquisition between fair value and book value is computed and assumed to represent an additional cost incurred by the parent. If the asset or liability has a finite life, this amount is then included in all subsequent consolidations after periodic amortization is removed. Goodwill is reported for any unexplained excess payment made in acquiring control over the subsidiary. Many analysts compute total asset turnover and return on assets (ROA) in evaluating the efficiency of management's use of company assets.

Talking with a Real Investing Pro (Continued)

Following is a continuation of our interview with Kevin G. Burns.

Question: For the year ended December 31, 2008, Yahoo! Inc. reported its net income as approximately $424 million. The company also disclosed comprehensive income of only $213 million. Does it disturb you that this one company reports two separate income figures and they can be so significantly different? Or do you find disclosing income in two distinct ways to be helpful when you analyze a company like this?

Kevin Burns: Actually I think the idea of disclosing income in two different ways makes sense. Having said that, if I were a shareholder of Yahoo! I would want to ask, Why these numbers are so far apart? What exactly is included in (or excluded from) each of these income figures? Is the company's core business sound? This question is probably best answered by net income. The reduction in arriving at comprehensive income is likely to have come from losses in the value of available-for-sale investments and from holding foreign currency balances. Is management distracted by trying to manage a large investment portfolio? How much of the difference comes from currency rate changes, and is there a way to hedge this volatility to reduce the impact? If there is a way to hedge the risk, why did company officials not do so?

In sum, the reason I like including both income numbers is that anything that increases disclosure is a positive, especially when investing money. The more transparency the better is my feeling. Then, investors can make up their own minds as to management's competence and the success of the overall business of the company.

Video Clip

" href="http://app.wistia.com/embed/medias/4965e43da3" class="replaced-iframe">(click to see video)

Unnamed Author talks about the five most important points in Chapter 12 "In a Set of Financial Statements, What Information Is Conveyed about Equity Investments?".

12.5 End-of-Chapter Exercises

Questions

1. Give three reasons one company would purchase the stock of another.
2. When is the purchase of stock in one company by another classified as a “trading security”?
3. Where is dividend revenue reported?
4. At what value are trading securities reported on the balance sheet?
5. Why does the accounting for trading securities differ from that of other assets like buildings or inventory?
6. What is an unrealized gain or loss?
7. What is an available-for-sale security?
8. At what value are available-for-sale securities reported on the balance sheet?
9. How does the accounting for unrealized gains and losses on available-for-sale securities differ from trading securities?
10. Define “comprehensive income.”
11. Which method of accounting is used when one company owns enough stock in another to exert “significant influence”?
12. When trying to determine if the equity method of accounting should be used, what guidelines are available to help accountants?
13. When and how is income from an equity investment recognized by the owner?
14. How are dividends paid by an investee reported by the owner under the equity method?
15. How much stock must one company own to be considered “in control” of another?
16. Define “consolidation.”
17. How is total asset turnover calculated?
18. How is return on assets determined?

True or False

1. ____ To keep things simpler for financial statement users, all investments are accounted for the same way.
2. ____ If the owner of trading securities is paid a dividend, it should be recorded as revenue and shown on the income statement.
3. ____ If a company owns 35 percent of another, it should use the equity method to account for the investment, regardless of whether or not it has any influence.
4. ____ The higher a company’s ROA, the more efficiently the company is using its assets.
5. ____ Gains and losses on available-for-sale securities do not affect net income until the securities are sold.

6. ____ All investments in other companies should be reported at the cost of the investment.
7. ____ When a company owns more than 50 percent of another, the financial statements of the two companies should be consolidated.
8. ____ Equity method investments are reported at their fair value on the balance sheet.
9. ____ Trading securities are defined as those that are held for a short time.
10. ____ Net income and comprehensive income are the same thing.

Multiple Choice

1. On March 5, Maxwell Corporation purchased seventy shares of Tyrone Company for $30 per share, planning to hold the investment for a short time. On June 30, Maxwell prepares its quarterly financial statements. On that date, Tyrone is selling for $32 per share. What is the unrealized gain Maxwell will report and where should it be reported?

    1. $140 unrealized gain, owners' equity section of balance sheet
    2. $140 unrealized gain, income statement
    3. $2,240 unrealized gain, income statement
    4. $2,100 unrealized gain, owners' equity section of balance sheet

2. Which of the following is **not** a reason investments in trading securities are shown at their fair value on the balance sheet?

    1. Fair values of publicly traded securities are readily available.
    2. Fair value is considered relevant information to financial statement users.
    3. Fair value is an objective amount determined by the market.
    4. Fair value is easier to determine than historical cost.

3. Jackson Corporation purchased 150 shares of Riley Corporation for $46 per share. The investment is available for sale. On 12/31/X5, Riley's stock is selling for $43 per share. Jackson's net income for the year was $235,000. What was Jackson's comprehensive income?

    1. $235,000
    2. $228,100
    3. $234,550
    4. $228,550

4. Anton Company owns 45 percent of Charlotte Corporation and exerts significant influence over it. This investment should be shown as:

    1. An equity method investment
    2. An available-for-sale investment
    3. A consolidation
    4. An investment in trading securities

5. Tried Company began the year with $450,000 in total assets and ended the year with $530,000 in total assets. Sales for the year were $560,000 and net income for the year was $46,000. What was Tried Company's return on assets for the year?

    1. 114%
    2. 9.4%
    3. 10.2%
    4. 8.2%

6. Hydro Company and Aqua Corporation are in the same industry. During 20X9, Hydro had average total assets of $35,000 and sales of $47,800. Aqua had average total assets of $49,000 and sales of $56,900. Which of the following is true?

    1. Aqua Corporation has a total asset turnover of 1.37 times.
    2. Hydro Company is not using is its assets as efficiently as Aqua Corporation.
    3. Aqua Corporation has a higher ROA than Hydro Company.
    4. Hydro Corporation has a total asset turnover of 1.37 times.

7. Lancaster Inc. purchases all the outstanding stock of Lucy Company for $4,500,000. The net assets of Lucy have a fair value of $2,900,000, including a patent with a book value of $4,700 and a fair value of $159,000. At what amount should the patent and any goodwill from this purchase be shown on consolidated financial statements on the date of purchase?

    1. Patent—$4,700, Goodwill—$0
    2. Patent—$159,000, Goodwill—$2,900,000
    3. Patent—$159,000, Goodwill—$1,600,000
    4. Patent—$4,700, Goodwill—$4,500,000

8. On 12/31/X2, Brenda Corporation purchased Kyle Inc. for $3,400,000. Kyle had one asset, a trademark, whose fair value ($45,000) exceeded its book value ($15,000) by $30,000. The trademark has a remaining useful life of five years. Goodwill was also recorded in this purchase in the amount of $146,000. Kyle continued to operate after the purchase, and now on 12/31/X3, Brenda is preparing consolidated statements for the year. Independent appraisers now believe Kyle's trademark is worth $50,000. Brenda's independent auditors believe that the goodwill has been impaired slightly and is now worth $120,000. At what amounts should the trademark and goodwill be shown on Brenda's consolidated balance sheet on 12/31/X3?

    1. Trademark—$36,000, Goodwill—$120,000
    2. Trademark—$30,000, Goodwill—$146,000
    3. Trademark—$50,000, Goodwill—$120,000
    4. Trademark—$50,000, Goodwill—$146,000

Problems

1. Record the journal entry for each event below:

1. Investor Corporation purchases 600 shares of stock in Company A for $60 per share on 1/1/X7. This investment is considered a trading security.
2. On 3/31/X7, Investor prepares quarterly financial statements. At this date, A is selling for $63 per share. Record any unrealized holding gain or loss.
3. On 4/15/X7, Company A pays a dividend of $2 per share.
4. On 6/30/X7, Investor prepares quarterly financial statements. At this date, A is selling for $59 per share. Record any unrealized holding gain or loss.
5. On 8/1/X7, Investor sells all of A for $62 per share.

2. On March 1, Johnson Inc. purchased 500 shares of Thomas Company stock when Thomas' stock was selling for $20 per share. Johnson plans to hold this stock for a short time and hopefully sell it for a gain.

   On December 31, Johnson prepares its financial statements. Thomas' stock is selling for $18 per share.

   1. Determine the unrealized gain or loss Johnson would report on its income statement.
   2. Show how the investment would be reported on Johnson's balance sheet.

3. Record the journal entry for each event below:

   1. Christopher Corporation purchases 1,000 shares of stock in Alpha Company for $30 per share on 7/1/X9. This investment is considered an available-for-sale security.
   2. On 9/30/X9, Christopher prepares quarterly financial statements. At this date, Alpha is selling for $25 per share. Record any unrealized holding gain or loss.
   3. On 12/31/X9, Investor prepares annual financial statements. At this date, Alpha is selling for $28 per share. Record any unrealized holding gain or loss.
   4. On 2/13/X0, Christopher sells 700 shares of Alpha for $31 per share.
   5. On 2/28/X0, Alpha pays a dividend of $0.40 per share.
   6. On 3/31/X0, Christopher prepares quarterly financial statements. At this date, Alpha is selling for $30 per share.

4. On April 16, Yowza Inc. purchased 900 shares of Cool Company stock when Cool's stock was selling for $15 per share. Yowza plans to hold this stock for more than a year.

   On December 31, Yowza prepares its financial statements. Cool's stock is selling for $20 per share.

   1. Determine the unrealized gain or loss Yowza would report in the owners' equity section of the balance sheet.
   2. Show how the investment would be reported on Yowza's balance sheet.
   3. Assume that Yowza's net income for the year was $478,000. What would Yowza's comprehensive income be?

5. Oregon Company, a paper products manufacturer, wishes to enter the Canadian market. The company purchased 30 percent of the outstanding stock of Canadian Paper Inc. on January 1 for $6,000,000. The CEO of Oregon will sit on the board of directors of Canadian, and other evidence of significant influence exists. At the date of purchase, the book value of Canadian's net assets was $20,000,000.

   1. Canadian reported net income of $760,000 for the year. Record the journal entry for Oregon.
   2. Canadian paid a cash dividend of $80,000. Record the journal entry for Oregon.
   3. What amount would Oregon report on its balance sheet as investment in Canadian?

6. On March 1, 20X8, Current Properties paid $1,000,000 for 25 percent of the shares of Sealy Enterprises. Current exerts significant influence over Sealy.

    1. Sealy reported earnings of $400,000 during 20X8. Record this journal entry for Current.
    2. Sealy paid dividends of $50,000 during October 20X8. Record this journal entry for Current.
    3. What amount would Current report on its balance sheet as investment in Sealy?
    4. Sealy reported earnings of $440,000 during 20X9. Record this journal entry for Current.
    5. Sealy paid dividends of $60,000 during October 20X9. Record this journal entry for Current.
    6. On December 30, Current sells its entire investment in Sealy for $1,200,000. Record the journal entry.

7. Teckla Corporation purchases all the outstanding stock of Feather Company on 1/1/X3 for $5,000,000. Teckla's balance sheet on that date **before the purchase** looked like this:

    Figure 12.19 Assets and Liabilities of Teckla

    Teckla Corporation
    Balance Sheet
    January 1, 20X3

Assets		**Liabilities**	
Cash	$9,400,000	Accounts Payable	$1,950,000
Inventory	700,000	Notes Payable	4,895,000
Land	5,000,000		
		Owners' Equity	
		Capital Stock	$5,000,000
		Retained Earnings	3,255,000
		Total Liabilities &	
Total Assets	$15,100,000	Owners' Equity	$15,100,000

    On 1/1/X3, Feather has the following assets and liabilities:

    Figure 12.20 Assets and Liabilities of Feather

	Value on Feather's Books	Current Market Value
Cash	$456,000	$456,000
Inventory	873,000	873,000
Land	50,000	760,000
Patent	5,000	1,000,000
Accounts Payable	500,000	500,000

1. Determine any goodwill that Teckla will show on its consolidated balance sheet.
2. Prepare a consolidated balance sheet for Teckla after it purchases Feather on 1/1/X3.

8. In several past chapters, we have met Heather Miller, who started her own business, Sew Cool. The financial statements for December are shown below. To calculate average total assets, assume that total assets on 6/1/20X8, when Sew Cool started business, were zero.

Figure 12.21 Sew Cool Financial Statements

Sew Cool Income Statement As of December 31, 20X8	
Revenue	$4,000
Cost of Goods	(2,000)
Gross Profit	2,000
Other Expenses	(1,695)
Earning before Tax	305
Tax Expense	(107)
Net Income	$198

Figure 12.22

Sew Cool
Stmt. of Retained Earnings
As of December 31, 20X8

Retained Earnings, December 1, 20X8	$500
Net Income	198
Dividends	(158)
Retained Earnings, December 31, 20X8	$540

Figure 12.23

Sew Cool
Balance Sheet
December 31, 20X8

Assets		**Liabilities**	
Current		**Current**	
Cash	$940	Accounts Payable	$900
Accounts Receivable	500	Income Tax Payable	120
Less Allowance for Doubtful Accounts	(20)	Total Current Liabilities	$1,020
Net Accounts Receivable	480		
Inventory	700		
Total Current Assets	$2,120		
Noncurrent		**Noncurrent**	
Equipment	$1,000	Notes Payable	$1,060
		Owners' Equity	
		Capital Stock	$500
		Retained Earnings	540
		Total Owners' Equity	$1,040
		Total Liabilities & Owners' Equity	$3,120
Total Assets	$3,120		

Based on the financial statements determine the following:

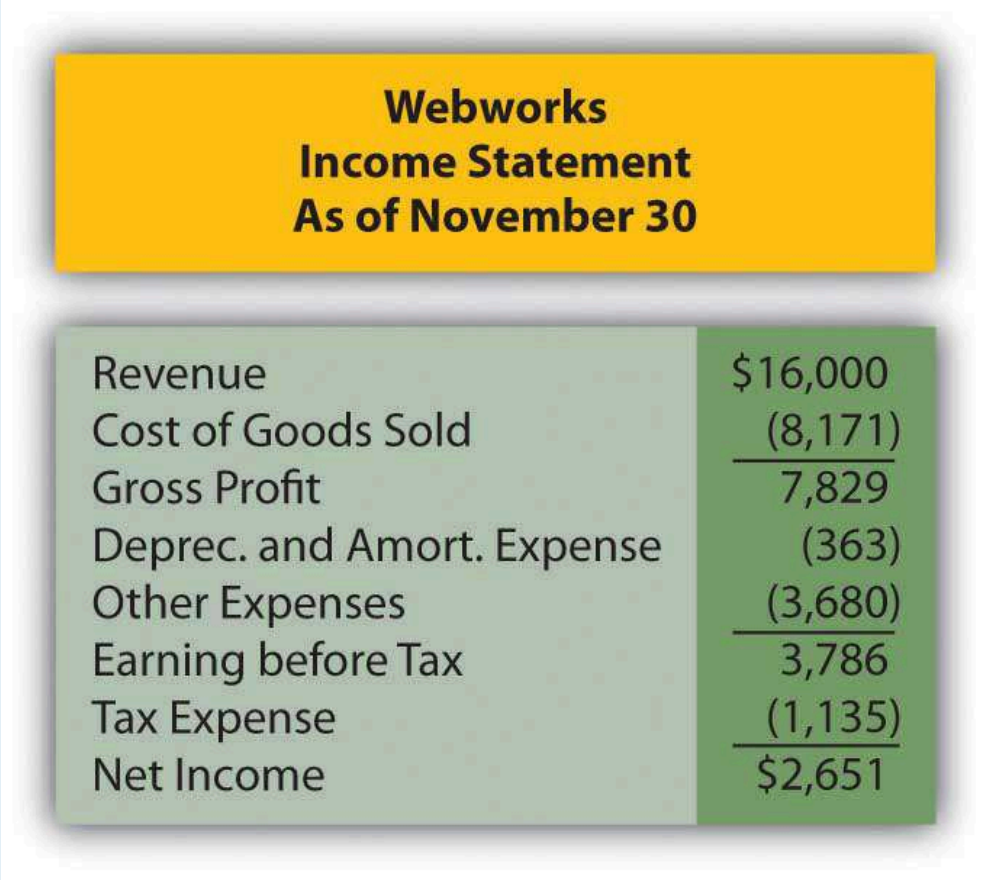
1. Total asset turnover
2. Return on assets

Comprehensive Problem

This problem will carry through several chapters, building in difficulty. It allows students to continuously practice skills and knowledge learned in previous chapters.

In Chapter 11 "In a Set of Financial Statements, What Information Is Conveyed about Intangible Assets?", you prepared Webworks statements for November. They are included here as a starting point for December.

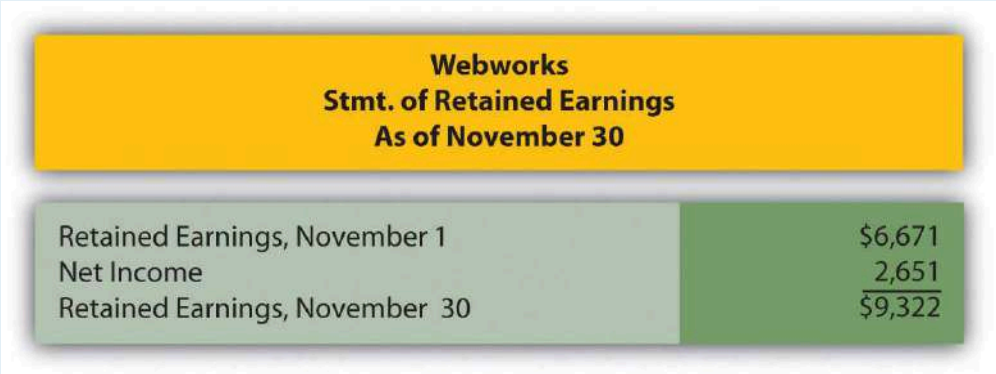
Figure 12.24 Webworks Financial Statements



Webworks
Income Statement
As of November 30

Revenue	$16,000
Cost of Goods Sold	(8,171)
Gross Profit	7,829
Deprec. and Amort. Expense	(363)
Other Expenses	(3,680)
Earning before Tax	3,786
Tax Expense	(1,135)
Net Income	$2,651

Figure 12.25



Webworks
Stmt. of Retained Earnings
As of November 30

Retained Earnings, November 1	$6,671
Net Income	2,651
Retained Earnings, November 30	$9,322

Figure 12.26

Webworks
Balance Sheet
November 30

Assets		**Liabilities**	
Current		**Current**	
Cash	$ 2,097	Accounts Payable	$ 2,585
Accounts Receivable	1,750	Salaries Payable	$ 150
Less Allowance for Doubtful Accounts	(175)	Unearned Revenue	400
Net Accounts Receivable	1,575		
Merchandise Inventory	1,129		
Supplies Inventory	20		
Prepaid Rent	200		
Total Current Assets	$ 5,021	Total Current Liabilities	$ 3,135
Property, Plant, and Equipment			
Equipment	$ 7,000		
Less Accumulated Depreciation	(730)		
Furniture	1,000		
Less Accumulated Depreciation	(34)		
Total P, P, and E	$ 7,236		
Other Noncurrent Assets			
Licensing Agreement, Net	$ 2,200		
		Owners' Equity	
		Capital Stock	$ 2,000
		Retained Earnings	9,322
		Total Owners' Equity	$11,322
		Total Liabilities & Owners' Equity	$14,457
Total Assets	$14,457		

The following events occur during December:

a. Webworks starts and completes nine more Web sites and bills clients for $5,000.

b. Webworks purchases supplies worth $130 on account.

c. At the beginning of December, Webworks had nine keyboards costing $111 each and ten flash drives costing $13 each. Webworks uses periodic FIFO to cost its inventory.

d. On account, Webworks purchases seventy keyboards for $113 each and one hundred flash drives for $15 each.

e. Webworks decides to invest a small amount of its excess cash in the stock market in the hopes of making a quick gain. Webworks purchases sixty shares of stock in XYZ Corporation for $5 per share in cash.

f. Webworks pays Nancy $750 for her work during the first three weeks of December.

g. Webworks sells sixty-five keyboards for $9,750 and ninety flash drives for $1,800 cash.

h. The Web site for the realtor started in November is completed.

i. Webworks collects $4,500 in accounts receivable.

j. Webworks pays off its salaries payable from November.

k. Webworks pays off $10,500 of its accounts payable.

l. XYZ Corporation pays Webworks a dividend of $40.

m. Webworks pays Leon a salary of $2,000.

n. Webworks pays taxes of $1,272 in cash.

Required:

A. Prepare journal entries for the above events.

B. Post the journal entries to T-accounts.

C. Prepare an unadjusted trial balance for Webworks for December.

D. Prepare adjusting entries for the following and post them to your T-accounts.

o. Webworks owes Nancy $200 for her work during the last week of December.

p. Leon's parents let him know that Webworks owes $300 toward the electricity bill. Webworks will pay them in January.

q. Webworks determines that it has $60 worth of supplies remaining at the end of December.

r. Prepaid rent should be adjusted for December's portion.

s. Webworks is continuing to accrue bad debts at 10 percent of accounts receivable.

t. Webworks continues to depreciate its equipment over four years and its furniture over five years, using the straight-line method.

u. The license agreement should continue to be amortized over its one-year life.

v. On December 31, XYZ stock is selling for $6 per share. Record any unrealized gain or loss.

w. Record cost of goods sold.

x. Near the end of December, a new flash drive appears on the market that makes the ones Webworks has been selling virtually obsolete. Leon believes that it might be able to sell the rest of its inventory (twenty flash drives) for $5 each.

E. Prepare an adjusted trial balance.

F. Prepare financial statements for December.

Chapter 13: In a Set of Financial Statements, What Information Is Conveyed about Current and Contingent Liabilities?

Video Clip

(click to see video)

Joe introduces Chapter 13 “In a Set of Financial Statements, What Information Is Conveyed about Current and Contingent Liabilities?” and speaks about the course in general.

13.1 Basic Reporting of Liabilities

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Define a "liability" by listing its essential characteristics.
2. Differentiate a current liability from a noncurrent liability.
3. Explain the significance that current liabilities have for investors and creditors who are studying the prospects of an organization.
4. Compute the current ratio.
5. Indicate the appropriate timing for the recognition of a liability.

Question: The June 30, 2009, consolidated balance sheet for The Procter & Gamble Company and its subsidiaries reports total **liabilities** *of over $71 billion, including current liabilities of approximately $31 billion. That seems to be a rather large figure, especially for an organization holding only $3.3 billion in cash and cash equivalents*.

For reporting purposes, the **current liabilities** *were divided into several specific categories*:

- *Accounts payable*
- *Accrued and other liabilities*
- *Debt due within one year*

When creating a balance sheet, what is reported as a liability? Why are some liabilities shown as current whereas others are not?
How does an accountant draw a distinction between liabilities that are labeled as current and those that are reported as noncurrent (sometimes referred to as long-term liabilities)?

Answer: A liability is an obligation owed to a party outside the reporting organization—a debt that can be stated in monetary terms. Liabilities normally require the payment of cash but may at times be settled by the conveyance of other assets or the delivery of services. Some reported liabilities are for definite amounts, although a number are no more than estimations.

The distinction between current and **noncurrent liabilities** is a function of time. A debt that is expected to be satisfied within one year from the date of the balance sheet is classified as a current liability[1]. Amounts owed for rent, insurance, utilities, inventory purchases, and the like usually fall into this category. If payment will not be made until after that one-year interval, the liability is reported as noncurrent. Bonds and notes payable are

common examples of noncurrent debts as are liabilities for employee pensions, long-term leases, and deferred income taxes. Current liabilities appear before noncurrent liabilities on a balance sheet.

Question: Below is the liability section of the balance sheet reported by Johnson & Johnson and Subsidiaries as of December 28, 2008. Note that additional information about many of these liabilities is provided in the notes to the company's financial statements.

Figure 13.1 Liability Section of Balance Sheet, Johnson & Johnson and Subsidiaries as of December 28, 2008

Current liabilities	
Loans and notes payable (Note 6)	$3,732
Accounts payable	7,503
Accrued liabilities	5,531
Accrued rebates, returns, and promotions	2,237
Accrued salaries, wages, and commissions	1,432
Accrued taxes on income	417
Total current liabilities	20,852
Long-term debt (Note 6)	8,120
Deferred taxes on income (Note 8)	1,432
Employee-related obligations (Notes 5 and 13)	7,791
Other liabilities	4,206
	$42,401

All numbers in millions.

Decision makers who analyze an organization such as Johnson & Johnson usually spend considerable time studying the data available about liabilities, often focusing on current liabilities. Why is information describing liabilities, especially the size and composition of current liabilities, considered so important when assessing the financial position and economic health of a business?

Answer: Liabilities represent claims to assets. Debts must be paid as they come due or the entity risks damaging its future ability to obtain credit or even the possibility of bankruptcy. To stay viable, organizations need to be able to generate sufficient cash on an ongoing basis to meet all obligations. Virtually no other goal can be more important, both to company officials and any external decision makers assessing an entity's financial wellbeing and potential for future success.

In general, the higher a liability total is in comparison to the reported amount of assets, the riskier the financial position. The future is always cloudy for a company when the size of its debts begins to approach the total of its assets. The amount reported as current liabilities is especially significant in this analysis because those debts must be satisfied in the near future. Sufficient cash has to be available quickly, often within weeks or months. Not surprisingly, analysts become concerned when current liabilities grow to be relatively high in comparison with current assets because the organization might not be able to meet those obligations as they come due. In a newspaper account of Advanced Cell Technology, the following warning was issued: "It reported $17 million in

current liabilities, but only $1 million in cash and other current assets, an indication it could be forced to file for bankruptcy protection" (Wallack, 2008).

As mentioned in an earlier chapter, one tool utilized by decision makers in judging the present level of risk posed by a company's liability requirements is the **current ratio**: current assets divided by current liabilities. This is a simple benchmark that can be computed using available balance sheet information. Although many theories exist as to an appropriate standard, any current ratio below 1.00 to 1.00 signals that the company's current liabilities exceed its current assets.

Figure 13.2 Sample of Recent Current Ratios

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092994.html

Question: An organization is not inclined to report more liabilities than necessary because of potential damage to the image being portrayed. The inclusion of debts tends to make a company look riskier to creditors and investors. Thus, the danger that officials will report an excessive amount of liabilities seems slight. Balance sheets look better to decision makers if fewer obligations are present to drain off resources. Consequently, where possible, is there not a tendency for officials to limit the debts that are reported?
At what point does an entity have to recognize a liability?
How does U.S. GAAP ensure that all liabilities are appropriately included on a balance sheet?

Answer: FASB *Statement of Financial Accounting Concepts No. 6* defines many of the elements found in a set of financial statements. According to this guideline, liabilities should be recognized when several specific characteristics all exist:

1. there is a probable future sacrifice
2. of the reporting entity's assets or services
3. arising from a present obligation that is the result of a past transaction or event.

To understand the reporting of liabilities, several aspects of these characteristics are especially important to note. First, the obligation does not have to be absolute before recognition is required. A future sacrifice only has to be "probable." This standard leaves open a degree of uncertainty.

As might be expected, determination as to whether a potential payment is probable can be the point of close

scrutiny when independent CPAs audit a set of financial statements. The line between “probable” and “not quite probable” is hardly an easily defined benchmark.

Second, for reporting to be required, a debt must result from a past transaction or event.

- An employee works for a company and is owed a salary. The work is the past event that creates the obligation.
- A vendor delivers merchandise to a business. Acquisition and receipt of these goods is the past event that creates the obligation.

Third, the past transaction or event must create a present obligation. In other words, an actual debt must exist and not just a potential debt. Ordering a piece of equipment is a past event but, in most cases, no immediate obligation is created. In contrast, delivery of this equipment probably does obligate the buyer and, thus, necessitates the reporting of a liability. Often, in deciding whether a liability should be recognized, the key questions for the accountant are (a) what event actually obligates the company and (b) when did that event occur?

Determining the liabilities to be included on a balance sheet often takes considerable thought and analysis. Accountants for the reporting company produce a list of the debts that meet the characteristics listed above. The independent auditor then spends considerable time and energy searching for any other obligations that might have been omitted, either accidentally or on purpose.

Key Takeaway

Companies are wary of recording liabilities because of the negative impact on reported information. Thus, U.S. GAAP has established rules to help ensure the proper inclusion of liabilities. When specified characteristics are met, a liability is shown. Current liabilities typically are those reported debts that must be satisfied within one year from the balance sheet date. Because a company needs to be able to meet its debts as they come due, analysts pay close attention to this total. The current ratio is also watched closely by many as a sign of financial strength.

[1]In upper-level accounting courses, the definition of a current liability is refined a bit. It refers to any liability that will require the use of a current asset or the creation of another current liability. However, the one-year standard presented in this textbook is sufficient in a vast majority of cases.

References

Wallack, T., “Fame-courting biotech running short of cash,” *The Boston Globe*, July 17, 2008, A-1.

13.2 Reporting Current Liabilities Such as Gift Cards

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Define and record "accrued liabilities."
2. Report the sale and redemption of gift cards.
3. Account for gift cards that are not expected to be redeemed.

Question: Current liabilities often include rent payable, salary payable, insurance payable, and the like. These debts are incurred in connection with day-to-day operations. The amounts are known and payment will be made within a relatively short period of time.

Liabilities that result from physical events such as the purchase of inventory or supplies are often reported as accounts payable. Other current debts (interest payable or rent payable, for example) are sometimes combined under the general title of **accrued liabilities** *because they grow gradually over time rather than through a specific transaction. How does an organization determine the amount of current liabilities to be reported on its balance sheet?*

Answer: As discussed in a previous chapter, the timing for the recognition of a purchase is guided by the FOB point specified by the seller or negotiated by the parties. If marked "FOB shipping point," the liability is reported by the buyer when the goods leave the seller's place of business. "FOB destination" delays recordation until the merchandise is received by the buyer. Unless goods are damaged during transit or a dispute arises over payment for transportation charges, the FOB point is only relevant around the end of a company's fiscal year as the accountant attempts to classify transactions between one period and the next.

Many other liabilities are not created by a specific event but rather grow gradually day by day. Interest and rent are common examples but salaries, insurance, payroll taxes, and utilities also accrue in the same manner. They increase based on the passage of time. Interest on a loan or the amount due to an employee gets larger on a continual basis. For convenience, accounting systems often ignore the growth in these debts until payment is made or financial statements are prepared. Adjusting entries are required at the end of a period to recognize any accrued liabilities that have otherwise been omitted from the general ledger.

To illustrate, assume a large group of employees earns a total of $10,000 per day. They work Monday through Friday with payment made on the final day of each week. If the company's year ends on Wednesday, an adjustment is necessary so that the expense on the income statement and the liability on the balance sheet are both

presented fairly for the three days that have passed. The following adjustment is made for $30,000 ($10,000 per day for three days) so that the debt incurred for salaries in the first year is reported properly.

Figure 13.3 Year-end Adjusting Entry to Recognize Debt for Three Days' Work

As a second example, assume a company borrows $100,000 from a bank at a 6 percent annual interest rate on December 1 with payment to be made in six months. At the end of that year, the company owes interest but only for one month, an amount that is recognized through the following adjusting entry. Accrued interest of $500 ($100,000 principal × 6 percent × 1/12 year) is reported as of December 31.

Figure 13.4 Year-end Adjusting Entry to Recognize Interest for One Month

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092996.html

Question: The February 28, 2009, balance sheet for Best Buy Co. Inc. shows several typical current liability accounts such as accounts payable and accrued liabilities. However, a $479 million figure also appears titled "Unredeemed **Gift Card Liabilities***." Over the last decade or so, the importance of gift cards has escalated dramatically for many businesses. By purchasing such cards, customers obtain the right to a specified amount of goods or services. From Starbucks to iTunes, these cards are sold to serve as gifts or merely as a convenient method for handling future payments. How does a company such as Best Buy account for the thousands of gift cards that it sells each year?*

Answer: A liability represents a probable future sacrifice of an asset or service. By selling a gift card, a company has accepted an obligation that will be reported on its balance sheet. Companies such as Best Buy or Barnes & Noble must be willing to hand over inventory items such as cameras or books at the time the gift card is presented. Or, perhaps, some service can be required by the cardholder such as the repair of a computer or a massage. To the seller, a gift card is a liability but one that is not normally settled with cash. Probably the most common type of gift card is a postal stamp. When bought, the stamp provides a person with the right to receive a particular service, the mailing of a letter or package.

To illustrate, assume that a company sells ten thousand gift cards with a redemption value of $50 each. Revenue cannot be recognized when sold because the earning process is not substantially complete. The asset or service

has not yet been conveyed to the customer. Rather, a liability (such as “unearned revenue” or “gift card liability”) is reported to indicate that the company has an obligation to the holder of the card.

Figure 13.5 Sale of Ten Thousand $50 Gift Cards for Cash

Cash	500,000	
Unearned Revenue		500,000

Over time, customers will present their gift cards for selected merchandise. Assume that a person uses the first $50 card to buy goods which had originally cost the company only $32. Upon redemption, the liability is satisfied and the revenue can be recognized. The obligation is met and the earning process has been substantially completed. The second entry below presumes a perpetual inventory system is in use.

Figure 13.6 Redemption of Gift Card

Unearned Revenue	50	
Revenue		50
Cost of Goods Sold	32	
Inventory		32

Question: Some gift cards are never redeemed. They might be lost or just forgotten. Does the liability for a gift card remain on a company’s balance sheet indefinitely if it is unlikely that redemption will ever occur?

Answer: One reason that gift cards have become so popular with businesses is that some percentage will never be redeemed. They will be misplaced, stolen or the person will move away or die. In such cases, the seller has received money but was never forced to fulfill the obligation. The entire amount of the sale is profit.

A difficult theoretical question arises as to the timing of recognition of the revenue from any such anticipated defaults since the earning process is never substantially completed by redemption. In theory, a company recognizes this revenue when reasonable evidence exists that the card will never be used by the customer. Practically, though, determining this precise point is a matter of speculation.

Companies typically report the revenue from unused gift cards at one of three possible times:

1. When the cards expire if a time limit is imposed.
2. After a specified period of time such as eighteen months or two years.
3. In proportion to the cards that are actually redeemed. For example, assume historically that $8,000 in gift cards are never used by their owners. If 10 percent of the expected gift cards are turned in by customers, the company can also reclassify $800 (10 percent of $8,000) from unearned revenue to revenue to reflect the estimated portion of those cards that will never be presented.

Because of this accounting issue, a note to the financial statements produced by Best Buy explains: “We recognize revenue from gift cards when: (i) the gift card is redeemed by the customer, or (ii) the likelihood of the gift card being redeemed by the customer is remote (‘gift card breakage’), and we determine that we do not have a legal obligation to remit the value of unredeemed gift cards to the relevant jurisdictions.”

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092997.html

Key Takeaway

Accounts payable are created by the purchase of inventory or supplies. Accrued liabilities are those debts that grow gradually over time. All such liabilities must be recorded prior to the preparation of financial statements. In today’s retail world, many companies sell gift cards. Because a product or service must be provided to the holder of a gift card, the company has an obligation and a liability is reported. The liability is later reclassified as revenue when the card is redeemed because the earning process is substantially complete. Revenue should also be recorded when it becomes likely that redemption will never occur. This happens when cards are lost, stolen, or the customer has died or left the area. The company must ensure that revenue for such gift cards is not reported until an appropriate point in time.

13.3 Accounting for Contingencies

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Define a “commitment” and explain the method by which it is reported.
2. Define a “contingency” and explain the method by which it is reported.
3. Identify the criteria that establish the reporting of a contingent loss.
4. Describe the appropriate accounting for those contingent losses that do not qualify for recognition at the present time.
5. Explain the handling of a loss that ultimately proves to be different from the originally estimated and recorded balance.
6. Provide the proper reporting rules for a contingency.

Question: The December 31, 2008, balance sheet for E. I. du Pont de Nemours and Company (better known as DuPont) shows total liabilities of approximately $28.7 billion. Immediately following the liability section, a separate category titled “Commitments and Contingent Liabilities” is included but no monetary figure is presented. Note 19 to the financial statements provides further details. In several pages of explanatory material, a number of future matters facing the company are described such as product warranties, environmental actions, litigation, and purchase commitments. In financial reporting, what is meant by the terms “commitments” and “contingencies” (including loss and gain contingencies)?

Answer:

Commitments. Commitments represent unexecuted contracts. For example, assume that a business places an order with a truck company for the purchase of a large truck. The business has made a **commitment** to pay for this new vehicle but only after it has been delivered. Although cash may be needed in the future, no event (delivery of the truck) has yet created a present obligation. There is not yet a liability to report; no journal entry is appropriate.

The information is still of importance to decision makers because future cash payments will be required. However, events have not reached the point where all the characteristics of a liability are present. Thus, extensive information about commitments is included in the notes to financial statements but no amounts are reported on either the income statement or the balance sheet. With a commitment, a step has been taken that will likely lead to a liability.

Contingencies. A **contingency** poses a different reporting quandary. A past event has occurred but the amount of the present obligation (if any) cannot yet be determined. With a contingency, the uncertainty is about the outcome

of an action that has already taken place. The accountant is not a fortune teller who can predict the future. For example, assume Wysocki Corporation commits an act that is detrimental to the environment so that the federal government files a lawsuit for damages. The original action against the environment is the past event that creates the contingency. However, both the chance of losing the suit and the possible amount of any penalties might not be known definitively for several years. What, if anything, should be recognized in the interim?

Because companies prefer to avoid (or at least minimize) the recognition of losses and liabilities, it is not surprising that structured guidelines are needed for reporting contingencies. Otherwise, few if any contingencies would ever be reported. U.S. GAAP in this area was established in 1975 when FASB issued its Statement Number Five, "Accounting for Contingencies." This pronouncement requires the recognition of a **loss contingency** if

1. the loss is deemed to be probable, and
2. the amount of loss can be reasonably estimated.

When both of these criteria are met, the expected impact of the loss contingency is recorded. To illustrate, assume that the lawsuit above was filed in Year One. Wysocki officials assess the situation. They believe that a loss is probable and that $800,000 is a reasonable estimation of the amount that will eventually have to be paid as a result of the damage done to the environment. Although this amount is only an estimate and the case has not been finalized, this contingency must be recognized.

Figure 13.7 Year One—Expected Loss from Lawsuit

FASB identifies a number of examples of loss contingencies that are evaluated and reported in this same manner including:

- Collectability of receivables
- Obligations related to product warranties and product defects
- Risk of loss or damage of enterprise property by fire, explosion, or other hazards
- Threat of expropriation of assets
- Pending or threatened litigation
- Actual or possible claims and assessments
- Guarantees of indebtedness of others

Question: The likelihood of loss in connection with many contingencies is not always going to be probable or subject to a reasonable estimation. What reporting is appropriate for a loss contingency that does not qualify for recording at the present time?

Answer: If the likelihood of loss is only reasonably possible (rather than probable) or if the amount of a probable loss does not lend itself to a reasonable estimation, only disclosure in the notes to the financial statements is necessary rather than actual recognition. A contingency where the chance of loss is viewed as merely remote can be omitted from the financial statements.

Unfortunately, this official standard provides little specific detail about what constitutes a probable, reasonably possible, or remote loss. “Probable” is described in Statement Number Five as likely to occur and “remote” is a situation where the chance of occurrence is slight. “Reasonably possible” is defined in vague terms as existing when “the chance of the future event or events occurring is more than remote but less than likely” (paragraph 3). The professional judgment of the accountants and auditors is left to determine the exact placement of the likelihood of losses within these categories.

Not surprisingly, many companies contend that future adverse effects from all loss contingencies are only reasonably possible so that no actual amounts are reported. Practical application of official accounting standards is not always theoretically pure, especially when the guidelines are nebulous.

Question: Assume that a company recognizes a contingent loss because it is judged to be probable and subject to a reasonable estimation. Eventually, all estimates are likely to prove wrong, at least in some small amount. What happens when a figure is reported in a set of financial statements and the actual total is later found to be different?

For example, Wysocki Corporation recognized an estimated loss of $800,000 in Year One because of a lawsuit involving environmental damage. Assume the case is eventually settled in Year Two for $900,000. How is the additional loss of $100,000 reported? It relates to an action taken in Year One but the actual amount is not finalized until Year Two. The difference is not apparent until the later period.

Answer: In Year One, because both criteria were met, an $800,000 loss was recognized on the income statement along with a corresponding liability. Notes to the financial statement explain the nature of this lawsuit as well as the range of any reasonably possible losses. Decision makers analyzing the Wysocki Corporation should realize that the amount reported is not a precise measure of the eventual loss. The same is true of all contingencies and other estimations. By the time that the exact amount of loss is determined, investors and creditors have already incorporated the original information into their decisions, including the uncertainty of the outcome. Restating the Year One loss to $900,000 does not allow them to undo and change the decisions that were made in the past.

Consequently, no change is made in the $800,000 figure reported for Year One; the additional $100,000 loss is recognized in Year Two. The amount is fixed at the time that a better estimation (or final figure) is available. This same reporting is utilized in correcting any reasonable estimation. Wysocki corrects the balances through the following journal entry that removes the liability and records the remainder of the loss.

Figure 13.8 Year Two—Settlement of Lawsuit

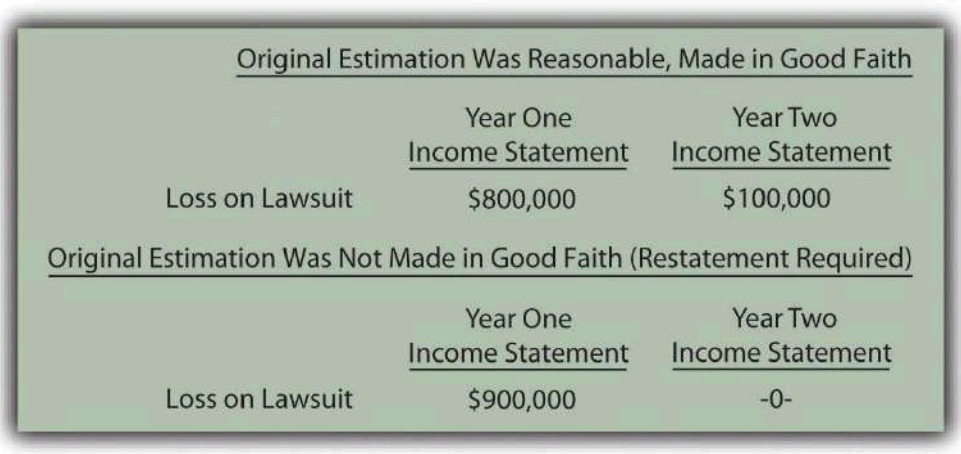
Estimated Liability from Lawsuit	800,000	
Additional Loss on Lawsuit	100,000	
Cash		900,000

One important exception to this handling does exist. If the initial estimation was viewed as fraudulent—an attempt to deceive decision makers—the $800,000 figure reported in Year One is physically restated. It simply cannot continue to appear. All the amounts in a set of financial statements have to be presented in good faith. Any reported balance that fails this essential criterion is not allowed to remain. Furthermore, even if there was no overt attempt to deceive, restatement is still required if officials should have known that a reported figure was materially wrong. Such amounts were not reported in good faith; officials have been grossly negligent in reporting the financial information.

From a journal entry perspective, restatement of a previously reported income statement balance is accomplished by adjusting retained earnings. Revenues and expenses (as well as gains, losses, and any dividend paid figures) are closed into retained earnings at the end of each year. That is where the previous year error now resides.

Consequently, upon discovery that the actual loss from this lawsuit is $900,000, that amount is shown by one of the following two approaches:

Figure 13.9 Two Ways to Fix an Estimation



Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092998.html

Question: The previous discussion has been about loss contingencies. Companies obviously can also have **gain contingencies**. *In a lawsuit, for example, one party might anticipate winning $800,000 but eventually collect $900,000. Are the rules for reporting gain contingencies the same as those applied to loss contingencies?*

Answer: As a result of the conservatism inherent in financial accounting, the timing used in the recognition of gains does not follow the same rules applied to losses. Losses are anticipated when they become probable; that is a fundamental rule of financial accounting. Recognition of gains is delayed until they actually occur (or, at least until they reach the point of being substantially complete). Disclosure in the notes is still important but the decision as to whether the outcome is probable or reasonably possible is irrelevant in reporting a gain. Gains are not anticipated for reporting purposes.

Figure 13.10 Reporting a Gain Contingency

	Year One Income Statement	Year Two Income Statement
Gain on Lawsuit	-0-	$900,000

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093019.html

Talking with an Independent Auditor about International Financial Reporting Standards (Continued)

Following is a continuation of our interview with Robert A. Vallejo, partner with the accounting firm PricewaterhouseCoopers.

Question: According to U.S. GAAP, a contingent loss must be recognized when it is probable that it will occur and a reasonable estimation of the amount can be made. That rule has been in place now for over thirty years and is well understood in this country. Are contingent losses handled in the same way by IFRS?

Robert Vallejo: The theory is the same under IFRS but some interesting and subtle differences do exist. If there is a probable future outflow of economic benefits and the company can form a reliable estimate, then that amount must be recognized. However, the term "probable" is defined as "more likely than not" which is much more easily reached than under the requirements of U.S. GAAP. Thus, the reporting of more contingent losses is likely under IFRS than currently under U.S. GAAP.

IAS 37, Provisions, Contingent Liabilities and Contingent Assets, states that the amount recorded should be the best estimate of the expenditure that would be required to settle the present obligation at the balance sheet date. That is the best estimate of the amount that an entity would rationally pay to settle the obligation at the balance sheet date or to transfer it to a third party. Under U.S. GAAP, if there is a range of possible losses but no best estimate exists within that range, the entity records the low end of the range. Under IFRS, the entity records the midpoint of the range. That is a subtle difference in wording, but it is one that could have a significant impact on financial reporting for organizations where expected losses exist within a very wide range.

Key Takeaway

Entities often make commitments that are future obligations that do not yet qualify as liabilities that must be reported. For accounting purposes, they are only described in the notes to financial statements. Contingencies are potential liabilities that might result because of a past event. The likelihood of loss or the actual amount of the loss is still uncertain. Loss contingencies are recognized when their likelihood is probable and this loss is subject to a reasonable estimation. Reasonably possible losses are only described in the notes and remote contingencies can be omitted entirely from financial statements. Estimations of such losses often prove to be incorrect and normally are simply fixed in the period discovered. However, if fraud, either purposely or through gross negligence, has occurred, amounts reported in prior years are restated. Contingent gains are only reported to decision makers through disclosure within the notes to the financial statements.

13.4 Accounting for Product Warranties

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Explain the difference between an embedded and an extended product warranty.
2. Account for the liability and expense incurred by a company that provides its customers with an embedded warranty on a purchased product.
3. Account for the amount received on the sale of an extended warranty and any subsequent cost incurred as a result of this warranty.
4. Compute the average age of accounts payable.

Question: FASB Statement Number 5 includes an **embedded product warranty** *as an example of a contingency. A company sells merchandise such as a car or a microwave and agrees to fix certain problems if they arise within a specified period of time. If the car's transmission breaks, for example, the seller promises to replace it. Making the sale with a warranty attached is the past event that creates this contingency. However, the item acquired by the customer must break before the company has an actual loss. That outcome is uncertain*.

In accounting for contingencies, several estimates are required:

- *The approximate number of claims*
- *The likelihood that claims will result from the warranty*
- *The eventual cost*

As an example, General Electric reported on its December 31, 2008, balance sheet a liability for product warranties totaling over $1.68 billion. That is certainly not a minor obligation. In the notes to the financial statements, the company explains, "We provide for estimated product warranty expenses when we sell the related products. Because warranty estimates are forecasts that are based on the best available information—mostly historical claims experience—claims costs may differ from amounts provided." How does a company record and report contingencies such as product warranties?

Answer: In accounting for warranties, cash rebates, the collectability of receivables and other similar contingencies, the likelihood of loss is not an issue. These losses are almost always probable. For the accountant, the challenge is in arriving at a reasonable estimate of that loss. How many microwaves will break and have to be repaired? What percentage of cash rebate coupons will be presented by customers in the allotted time? How often will a transmission need to be replaced?

Many companies utilize such programs on an ongoing basis so that data from previous offers will be available to help determine the amount of the expected loss. However, historical trends cannot be followed blindly. Officials still have to be alert for any changes that could impact previous patterns. For example, in bad economic periods, customers are more likely to take the time to complete the paperwork required to receive a cash rebate. Or the terms may vary from one warranty program to the next. Even small changes in the wording of an offer can alter the expected number of claims.

To illustrate, assume that a retail store sells ten thousand refrigerators during Year One for $400 cash each. The product is covered by a warranty that extends until the end of Year Three. No claims are made in Year One but similar programs in the past have resulted in repairs being made to 3 percent of the refrigerator at an average cost of $90. Thus, this warranty is expected to cost a total of $27,000 (ten thousand units × 3 percent or three hundred claims × $90 each). Immediate recognition is appropriate because the loss is both probable and subject to reasonable estimation.

Although no repairs are made in Year One, the $27,000 is recognized in that period. All requirements for a liability have been met. In addition, the matching principle states that expenses should be recorded in the same period as the revenues they help generate. The revenue from the sale of the refrigerators is recognized in Year One so the warranty expense resulting from those revenues is also included at that time.

Figure 13.11 Year One—Sale of Ten Thousand Refrigerators for $400 Each

Figure 13.12 Year One—Recognize Expected Cost of Warranty Claims

This warranty is in effect until the end of Year Three. Assume in the year following the sale (Year Two) that repairs costing $13,000 are made for these customers at no charge. Refrigerators break and are fixed as promised. The expense has already been recognized in the year of sale so the payments made by the company serve to reduce the recorded liability. They have no additional impact on net income.

Figure 13.13 Year Two—Payment for Repairs Covered by Warranty

At the end of Year Two, the warranty payable T-account in the general ledger holds a balance of $14,000 ($27,000 original estimation less $13,000 payout for repairs to date). Because the warranty has not expired, company officials need to evaluate whether this $14,000 liability is still a reasonable estimation of the remaining costs to be incurred. If so, no further adjustment is made.

However, the original $27,000 was an estimate. More information is now available, some of which might suggest that $14,000 is no longer the best number to be utilized for the final period of the warranty. As an illustration, assume that a design flaw has been found in the refrigerators and that $20,000 (rather than $14,000) is now the estimate of the costs to be incurred in the final year of the warranty. The $14,000 is no longer appropriate. The reported figure must be updated to provide a fair presentation of the information that is now available. Estimations should be changed at the point that new data provide a clearer vision of future events.

Figure 13.14 December 31, Year Two—Adjust Warranty Liability from $14,000 to Expected $20,000

In this adjusting entry, the change in the expense is not recorded in the period of the sale. As discussed earlier, no retroactive changes are made in previously reported figures unless fraud occurred or an estimate was held to be so unreasonable that it was not made in good faith.

Question: Not all warranties are built into a sales transaction. Many retailers also provide **extended product warranties** *but for an additional fee. For example, assume a business sells a high-definition television with an automatic one-year warranty. The buyer receives this warranty as part of the purchase price. The accounting for that first year is the same as just demonstrated; an estimated expense and liability are recognized at the time of sale.*

However, an additional warranty for three more years is also offered at a price of $50. If on January 1, Year One, a customer chooses to acquire this three-year coverage, what recording is made by the seller?
Is an extended warranty purchased by a customer reported in the same manner as an automatic warranty embedded within a sales contract?

Answer: Extended warranties, which are quite popular in some industries, are simply insurance policies. If the customer buys the coverage, the product is insured against breakage or other harm for the specified period of time. In most cases, the company is making the offer in an attempt to earn extra profit. The seller hopes that the amount received for the extended warranty will outweigh the eventual repair costs. Therefore, the accounting differs here from that demonstrated for an embedded warranty that was provided to encourage the sale of the product. Because of the matching principle, the anticipated expense was recognized in the same period as the revenue generated by the sale of the product.

By accepting money for an extended warranty, the seller agrees to provide services in the future. This contract is much like a gift card. The revenue is not earned until the earning process is substantially complete in the future. Thus, the $50 received for the extended warranty is initially recorded as “unearned revenue.” This balance is a liability because the company owes a specified service to the customer. As indicated previously, liabilities do not always represent future cash payments.

Figure 13.15 January 1, Year One—Sale of Extended Warranty Covering Years 2–4

Note that no expense was estimated and recorded in connection with this warranty. As explained by the matching principle, no expense is recognized until the revenue begins to be reported.

Because of the terms specified, this extended warranty does not become active until January 1, Year Two. The television is then covered for a three-year period. The revenue is recognized, most likely on a straight-line basis, over that time. The $50 will be recognized at the rate of 1/3 per year or $16.66.

Figure 13.16 December 31, Year Two (Three and Four)—Recognition of Revenue from Extended Warranty

In any period in which a repair must be made, the expense is recognized as incurred because revenue from this warranty contract is also being reported. To illustrate, assume that on August 8, Year Two, a slight adjustment must be made to the television at a cost of $9. The product is under warranty so there is no charge to the customer for this service. The expense recognized below is matched with the Year Two revenue recognized above.

Figure 13.17 August 8, Year Two—Repair Television under Contract

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092999.html

Question: Previously, the current ratio (current assets divided by current liabilities) and the amount of **working capital** *(current assets minus current liabilities) were discussed. Are there additional vital signs that relate to current liabilities that should be analyzed when looking at an organization?*
Should decision makers be aware of any specific ratios or amounts in connection with current liabilities that provide especially insightful information about a company's financial health and operations?

Answer: In studying current liabilities, the number of days a business takes to pay its accounts payable is a figure of interest. If a business begins to struggle, the time of payment tends to lengthen because of the difficulty in

generating sufficient cash amounts. Therefore, an unexpected jump in this number is often one of the first signs of financial problems and warrants concern.

To determine the **age of accounts payable** (or the number of days in accounts payable), the amount of inventory purchased during the year is first calculated:

cost of goods sold = beginning inventory + purchases – ending inventory,

Thus,

purchases = cost of goods sold – beginning inventory + ending inventory.

Using this purchases figure, the number of days that a company takes to pay its accounts payable on the average can be found. Either the average accounts payable for the year can be used below or just the ending balance.

purchases/365 = average purchases per day
accounts payable/average purchases per day = average age of accounts payable

As an illustration, the following information comes from the 2008 financial statements for Safeway Inc.

Figure 13.18 Information from 2008 Financial Statements for Safeway Inc.

Beginning Inventory	$2.798 billion
Ending Inventory	2.591 billion
Cost of Goods Sold	31.589 billion
Ending Accounts Payable	2.449 billion

The total of inventory purchases by Safeway during 2008 was over $31 billion:

purchases = cost of goods sold – beginning inventory + ending inventory
purchases = $31.589 billion – $2.798 billion + $2.591 billion
purchases = $31.382 billion.

The average purchases amount made each day during 2008 by this company was nearly $86 million:

purchases/365
$31.382/365 = $85.978 million.

The average age of ending accounts payable for Safeway at this time is between twenty-eight and twenty-nine days:

accounts payable/average daily purchases
$2.449 billion/$85.978 million = 28.48 days.

To evaluate that number, a decision maker would need to compare it to previous time periods, the typical payment terms for a business in that industry, and comparable figures from other similar corporations. Interestingly, the

same computation for the previous year (2007) showed that Safeway was taking over thirty-four days to pay off its accounts payable during that period.

Key Takeaway

Many companies incur contingent liabilities as a result of product warranties. If the warranty is given to a customer along with a purchased item, an anticipated expense should be recognized at that time as well as the related liability. If the cost of this type of embedded warranty eventually proves to be incorrect, the correction is made when discovered. Companies also sell extended warranties, primarily as a means of increasing profits. These warranties are recorded initially as liabilities and are reclassified to revenue over the time of the obligation. Subsequent costs are expensed as incurred to align with the matching principle. Expenses are not estimated and recorded in advance. Analysts often determine the average age of accounts payable to determine how quickly liabilities are being paid as an indication of an entity's financial health.

Talking with a Real Investing Pro (Continued)

Following is a continuation of our interview with Kevin G. Burns.

Question: Analysts often look closely at current liabilities when evaluating the future prospects of a company. Is there anything in particular that you look for when examining a company and its current liabilities?

Kevin Burns: For almost any company, there are a number of things that I look at in connection with current liabilities. I always have several questions where possible answers can concern me. I am interested in the terms of the current liabilities as well as the age of those liabilities. In other words, is the company current with its payments to vendors? Does the company have a significant amount of current liabilities but only a small amount of current assets? Or, stated more directly, can these liabilities be paid on time? Have current liabilities been growing while business has remained flat or grown much more slowly? Are any of the current liabilities to organizations controlled by corporate insiders? That always makes me suspicious so that, at the very least, I want more information. In sum, I like balance sheets where there are no potential conflicts of interest and the company is a reasonably fast payer of its debts.

Video Clip

" href="http://app.wistia.com/embed/medias/da8ac4644d" class="replaced-iframe">(click to see video)

Unnamed Author talks about the five most important points in Chapter 13 "In a Set of Financial Statements, What Information Is Conveyed about Current and Contingent Liabilities?".

13.5 End-of-Chapter Exercises

Questions

1. What is the difference between a current liability and a noncurrent liability?
2. Give an example of a current liability and a noncurrent liability.
3. Why is it important that a company be able to pay its liabilities as they come due?
4. Why are financial statement users particularly concerned about the amount of current liabilities a company has?
5. How is a company's current ratio calculated?
6. What are the three characteristics of liabilities according to FASB?
7. What are "accrued liabilities"?
8. How do companies account for gift cards it has sold?
9. Define "commitments."
10. What two criteria must be met for a company to record a contingency?
11. Give three examples of possible contingencies that a company would report.
12. How would a company report a contingency that is "reasonably possible"?
13. How would a company report a contingency where the chance of loss is "remote"?
14. How are contingent gains reported?
15. How should a company go about estimating liabilities like product warranties?
16. How is the age of accounts payable calculated?

True or False

1. ____ Contingent gains should only be recorded if they are probable and can be reasonably estimated.
2. ____ A current ratio of less than one means that a company has more current assets than current liabilities.
3. ____ A long-term note payable is an example of a current liability.
4. ____ Restatement of financial statements should occur if a company attempts to mislead investors by understating its liabilities.
5. ____ Embedded and extended warranties should be accounted for in the same way.
6. ____ When estimating its warranty liability, a company should consider things like the state of the economy.
7. ____ Contingent liabilities should be reported on the balance sheet if they are both probable and can be reasonably estimated.
8. ____ Age of accounts payable can help users determine if a company is having trouble paying its bills.

9. ____ Unearned revenue and accounts receivable are examples of current liabilities.
10. ____ Liabilities for gift cards and similar items must be kept on the balance sheet until they are redeemed, regardless of how long that takes.

Multiple Choice

1. Which of the following is **not** normally a current liability?
    1. Accounts payable
    2. Bonds payable
    3. Interest payable
    4. Income taxes payable
2. Sierra Inc. manufacturers environmentally friendly appliances. It offers a two-year warranty standard. In Year 1, Sierra sold 450,000 toasters. Past experience has told Sierra that approximately 4 percent of the toasters require repair at an average cost of $10 each. During Year 1, Sierra actually spends $38,000 and during Year 2, Sierra actually spends $105,000. What is the balance in the warranty liability account at the end of year 2?
    1. $180,000
    2. $143,000
    3. $38,000
    4. $37,000
3. Reporting contingent losses but not contingent gains is an example of which accounting principle?
    1. Matching
    2. Conservatism
    3. Going concern
    4. Cost/benefit
4. Watkins Inc. has the following assets:

Cash	$400
Inventory	$730
Prepaid Rent	$460
Equipment	$4,000

It has the following liabilities

Accounts Payable	$560
Unearned revenue	$200
Long-term Note Payable	$3,500

What is Watkins' current ratio?

1. 1.31
2. 1.49
3. 2.09
4. 1.14

5. The following figures appeared on Whazzit's financial statements for the year:

Cost of goods sold	$1,968,000
Beginning inventory	238,000
Ending inventory	249,000
Accounts payable	167,000

What was Whazzit's age of accounts payable?

1. 31.1 day
2. 47.9 days
3. 42.3 days
4. 30.8 days

6. Maxout Company sells computers. The computers have an embedded one-year warranty, but customers may choose to buy an extended warranty that covers the computer for two years beyond that. The cost of the extended warranty is $200. What journal entry would Maxout make at the end of the second year after the computer is purchased, assuming the customer also purchases the extended warranty?

1. Figure 13.19

2. Figure 13.20

3. Figure 13.21

4. Figure 13.22

7. Which of the following is **not** a criterion that must be met for an item to be classified as a liability?
    1. It is a certain future sacrifice
    2. The sacrifice is from the entity's assets or services
    3. It is a probable future sacrifice
    4. It arises from a present obligation that results from a past transaction

Problems

1. Knockoff Corporation makes a videogame unit known as the Gii. During the month of June, the following transactions occurred. Record any necessary journal entries for a–e.
    1. Knockoff purchased $300,000 of raw materials inventory on account.
    2. The company incurs salary expense of $45,000, which will not be paid until the beginning of July.
    3. Knockoff owes the IRS and other government entities $120,000 in taxes.
    4. OK Buy places an advance order for Giis and pays Knockoff $23,000. The Giis will be shipped in July.
    5. Knockoff owes a local bank $4,000 in interest.
    6. If Knockoff has $800,000 in current assets, and all current liabilities are given in a–e above, what is Knockoff's current ratio?
    7. Knockoff's main competitor, PlayItAgain, has a current ratio of 2.1. You are trying to decide which company to invest in. Which current ratio do you prefer? Why?
2. OK Buy sells gift cards in various denominations. The company likes to sell these because it receives the cash immediately, but knows that a certain percentage will never be redeemed for merchandise. On December 1, OK Buy had a balance in unearned revenue from sales of gift cards of $728,000.
    1. During December, OK Buy sold an additional $578,000 in gift cards. Prepare this journal entry.
    2. During December, $327,000 worth of gift cards were redeemed to purchase inventory that had originally cost OK Buy $190,000. Prepare these journal entries.
    3. On December 31, OK Buy's accountant determines that 3 percent of the outstanding gift cards will never be redeemed for various reasons. She used past history to help determine this figure.

Prepare a journal entry if necessary.

4. What is the balance in OK Buy's unearned revenue account on December 31 after all of the above transactions have been recorded?

3. Ingalls Company is a fine jeweler located in a mall in a midsize city. During December 20X4, an unfortunate accident happens. Mrs. Rita Yeargin trips over a giant, singing Rudolph set up by the mall management company and went sprawling into Ingalls' store where she cracked her head on a display case. She spent several days in the hospital with a sprained ankle, bruised elbow and a concussion. Prior to the end of the year, Mrs. Yeargin's lawyer files papers to sue both the mall management company and Ingalls for $1,000,000. Ingalls' insurance company tells it that its policy does not cover accidents involving giant, singing Rudolphs. Ingalls's attorney tells it that it is difficult to guess what a jury might do in this case. He estimates that Ingalls will probably be liable for only 20 percent of the $1,000,000 since the Rudolph actually belongs to the mall.

    1. Determine if Ingalls needs to record a journal entry on December 31, 20X4, and if so, record it.

4. Sadler Corporation produces lawnmowers. The lawnmowers come with a three-year warranty. During 20X6, Sadler sold 20,000 lawnmowers that cost $5,800,000 to manufacture for $10,000,000 cash. Sadler's accountant estimates that 10 percent will need to be repaired at some point over the next three years at an average cost of $37 per lawnmower.

    1. Make the journal entry to record the sale of the lawnmowers in 20X6.
    2. Record warranty expense for 20X6.
    3. During 20X7, Sadler spends $24,000 to repair the lawnmowers. Record this.
    4. At the end of 20X7, Sadler's accountant reevaluates the warranty estimates. The accountant believes that the actual warranty liability may be higher than her original estimates. She now believes that an additional $17,000 should be added. Make the necessary journal entry.
    5. During 20X8, Sadler spends $60,000 to repair the lawnmowers. Record this.

5. The Eyes Have It sells custom eyewear with a one-year embedded warranty. Customers may purchase an extended one-year warranty beyond that. During 20X7, the company sold 52,000 pairs of eyeglasses for $1,000,000. Customers who purchased 75 percent of those pairs also purchased the one-year extended warranty. This brought in $200,000 cash.

    1. Record the sale of the extended warranties in 20X7.
    2. Assume that during 20X9, the company spent $34,000 to repair glasses under the extended warranty. Record this entry.
    3. Record the entry Eyes will make when the extended warranties expire.

6. In several past chapters, we have met Heather Miller, who started her own business, Sew Cool. The financial statements for December are shown below. To calculate age of accounts payable, assume that beginning inventory on 6/1/20X8, when Sew Cool started business, was zero. *Also, assume that Sew Cool was only in business for 210 days*.

    Figure 13.23 Sew Cool Financial Statements

Sew Cool
Income Statement
As of December 31, 20X8

Revenue	$4,000
Cost of Goods	(2,000)
Gross Profit	2,000
Other Expenses	(1,695)
Earnings before Tax	305
Tax Expense	(107)
Net Income	$198

Figure 13.24

Sew Cool
Stmt. of Retained Earnings
As of December 31, 20X8

Retained Earnings, December 1, 20X8	$500
Net Income	198
Dividends	(158)
Retained Earnings, December 31, 20X8	$540

Figure 13.25

Sew Cool
Balance Sheet
December 31, 20X8

Assets		**Liabilities**	
Current		**Current**	
Cash	$940	Accounts Payable	$900
Accounts Receivable	500	Income Tax Payable	120
Less Allowance for Doubtful Accounts	(20)	Total Current Liabilities	$1,020
Net Accounts Receivable	480		
Inventory	700		
Total Current Assets	$2,120		
Noncurrent		**Noncurrent**	
Equipment	$1,000	Notes Payable	$1,060
		Owners' Equity	
		Capital Stock	$500
		Retained Earnings	540
		Total Owners' Equity	$1,040
		Total Liabilities & Owners' Equity	$3,120
Total Assets	$3,120		

Based on the financial statements determine the following:

1. Current ratio
2. Age of accounts payable

Comprehensive Problem

This problem will carry through several chapters, building in difficulty. It allows students to continuously practice skills and knowledge learned in previous chapters.

In Chapter 12 "In a Set of Financial Statements, What Information Is Conveyed about Equity Investments?", you prepared Webworks statements for December. They are included here as a starting point for January.

Figure 13.26 Webworks Financial Statements

Webworks
Income Statement
As of December 31

Revenue	$16,950
Cost of Goods Sold	(8,657)
Gross Profit	8,293
Deprec. and Amort. Expense	(363)
Other Expenses and Losses	(3,790)
Investment Income	100
Earnings before Tax	4,240
Tax Expense	(1,272)
Net Income	$ 2,968

Figure 13.27

Webworks
Stmt. of Retained Earnings
As of December 31

Retained Earnings, December 1	$9,322
Net Income	2,968
Retained Earnings, December 31	$12,290

Figure 13.28

Webworks
Balance Sheet
December 31

Assets		**Liabilities**	
Current		**Current**	
Cash	$ 3,215	Accounts Payable	$ 1,925
Accounts Receivable	2,250	Salaries Payable	200
Less Allowance for Doubtful Accounts	(225)		
Net Accounts Receivable	2,025		
Trading Securities, Net	360		
Merchandise Inventory	1,682		
Supplies Inventory	60		
Total Current Assets	$ 7,342	Total Current Liabilities	$ 2,125
Property, Plant, and Equipment			
Equipment	$ 7,000		
Less Accumulated Depreciation	(876)		
Furniture	1,000		
Less Accumulated Depreciation	(51)		
Total P, P, and E	$ 7,073		
Other Noncurrent Assets			
Licensing Agreement, Net	$ 2,000		
		Owners' Equity	
		Capital Stock	$2,000
		Retained Earnings	12,290
		Total Owners' Equity	$14,290
		Total Liabilities & Owners' Equity	$16,415
Total Assets	$16,415		

The following events occur during January:

a. Webworks starts and completes seven more Web sites and bills clients for $4,500.

b. Webworks purchases supplies worth $100 on account.

c. At the beginning of January, Webworks had fourteen keyboards costing $113 each and twenty flash drives which had been written down to $5 each in December due to *obsolescence*. Webworks uses periodic FIFO to cost its inventory.

d. On account, Webworks purchases sixty-five keyboards for $117 each and ninety of the new flash drives for $20 each.

e. Webworks pays Nancy $775 for her work during the first three weeks of January.

f. Webworks writes off an account receivable from October in the amount of $150 because collection appears unlikely.

g. Webworks receives $450 in advance to design a Web site for a local salon. Work won't begin on the Web site until February.

h. Webworks sells sixty keyboards for $9,000, all twenty of the old flash drives for $100 and eighty of the new flash drives for $2,400 cash.

i. During January, Webworks receives notice that one of its former clients is not happy with the work performed. When Webworks refuses to refund the client's money, the client decides to sue for what he paid plus damages for his "pain and suffering," which comes to $5,000. An attorney friend of Leon's mom believes that the suit is without merit and that Webworks probably will not have to pay anything.

j. Webworks collects $5,000 in accounts receivable.

k. During January, Webworks sells all of its stock in XYZ Company for $8 per share. Webworks had originally purchased sixty shares for $5 and they were selling for $6 per share on the last balance sheet date.

l. Webworks pays $200 for advertising that will run over the next two months.

m. Webworks pays off its salaries payable from December.

n. Webworks purchased 175 shares of QRS Company for $10 per share. Webworks considers this an available for sale security.

o. Webworks pays off $9,000 of its accounts payable.

p. Webworks pays Leon a salary of $2,000.

q. Webworks prepays $600 for rent for the months of January, February, and March.

r. QRS Company pays Webworks a dividend of $30.

s. Webworks pays taxes of $1,000 in cash.

Required:

A. Prepare journal entries for the above events.

B. Post the journal entries to T-accounts.

C. Prepare an unadjusted trial balance for Webworks for January.

D. Prepare adjusting entries for the following and post them to your T-accounts.

t. Webworks owes Nancy $200 for her work during the last week of January.

u. Leon's parents let him know that Webworks owes $320 toward the electricity bill. Webworks will pay them in February.

v. Webworks determines that it has $40 worth of supplies remaining at the end of January.

w. Prepaid rent should be adjusted for January's portion.

x. Prepaid advertising should be adjusted for January's portion.

y. Webworks is continuing to accrue bad debts at 10 percent of accounts receivable.

z. Webworks continues to depreciate its equipment over four years and its furniture over five years, using the straight-line method.

i. The license agreement should be amortized over its one-year life.

ii. QRS Company is selling for $9 per share on January 31.

iii. Record cost of goods sold.

E. Prepare an adjusted trial balance.

F. Prepare financial statements for January.

Chapter 14: In a Set of Financial Statements, What Information Is Conveyed about Noncurrent Liabilities Such as Bonds?

Video Clip

(click to see video)

Joe introduces Chapter 14 “In a Set of Financial Statements, What Information Is Conveyed about Noncurrent Liabilities Such as Bonds?” and speaks about the course in general.

14.2 The Issuance of Notes and Bonds

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Identify the various terms that are found in a note or bond contract such as face value, stated cash interest rate, and any types of security or covenants.
2. Record notes and bonds issued at face value where periodic interest payments are made on dates other than the year-end.
3. Explain the handling of notes and bonds that are sold between interest dates and make the journal entries for both the issuance and the first interest payment.

Question: Notes and bonds are contracts used in the borrowing of money. They are undoubtedly produced with great care by attorneys knowledgeable in contract law. What legal terms are typically included in debt instruments?

Answer: The specific terms written into a contract or indenture vary depending on what a debtor is willing to promise in order to entice a creditor to turn over needed financial resources. Some of the most common are as follows.

Face value or **maturity value**. The **note** or **bond** will specify the amount to be repaid at the end of the contract time. A $1,000 bond, for example, has a face value of $1,000—that amount is to be paid on a designated maturity date. Thus, based on the information presented previously from Marriott's financial statements, that company will eventually be required to pay $350 million to the holders of its Series I notes.

Payment pattern of the face value or maturity value. With some debts, no part of the face value is scheduled for repayment until the conclusion of the contract period. These are often referred to as **term notes or term bonds**. The debtor pays the entire amount (sometimes referred to as a balloon payment) when the contract reaches the end of its term. Based on the information provided, Marriott will be required to pay the $350 million face value of its Series I notes during 2017.

Other debts, **serial debts**, require serial payments where a portion of the face value is paid periodically over time. Home mortgages, for example, are commonly structured as serial notes. Part of each scheduled payment reduces the face value of the obligation so that no large amount remains to be paid on the maturity date.

Notes and bonds can also be set up to allow the debtor to choose to repay part or all of the face value prior to the due date. Such debts are often referred to as "callable." This feature is popular because it permits refinancing if

interest rates fall. A new loan is obtained at a cheap interest rate with the money used to pay off old notes or bonds that charge high interest rates. Sometimes a penalty payment is required if a debt is paid prematurely.

Interest rate. Creditors require the promise of interest before they are willing to risk loaning money to a debtor. Therefore, within the debt contract, a stated cash interest rate[1] is normally included. A loan that is identified as having a $100,000 face value with a stated annual interest rate of 5 percent lets both parties know that $5,000 in interest ($100,000 × 5 percent) will be conveyed from debtor to creditor each year.

Therefore, to service the Series I notes issued above, Marriott will be required to make annual interest payments of $22,312,500 ($350 million face value × the **stated interest rate** of 6.375 percent).

Interest payment dates. The stated amount of interest is paid on the dates identified in the contract. Payments can range from monthly to quarterly to semiannually to annually to the final day of the debt term.

Security. Many companies are not able to borrow money (or cannot borrow money without paying a steep rate of interest) unless some additional security is provided for the creditor. Any reduction of risk makes a note or bond instrument more appealing to potential lenders. For example, some loans (often dealing with the purchase of real estate) are mortgage agreements that provide the creditor with an interest in identified property. Although specific rights can vary based on state law and the wording of the contract, this type of security usually allows the creditor to repossess the property or force its liquidation if the debtor fails to make payments in a timely manner. The recent downturn in the housing market has seen many debtor defaults that have led to bank foreclosures on homes across the country.

A **debenture** is a debt contract that does not contain any security. The debtor is viewed as so financially strong that money can be obtained at a reasonable interest rate without having to add extra security agreements to the contract.

Covenants *and other terms*. Notes and bonds can contain an almost infinite list of other agreements. Many of these are promises made by the debtor to help ensure that money will be available to make required payments. For example, the debtor might agree to limit dividend payments until the liability is extinguished, keep its current ratio above a minimum standard, or limit the amount of other debts that it will incur.

Debts can also be convertible so that the creditor can swap them for something else of value (often the capital stock of the debtor) if that seems a prudent move. The notes to the financial statements for VeriSign Inc. for December 31, 2008, and the year then ended describe one such noncurrent liability. “The Convertible Debentures are initially convertible, subject to certain conditions, into shares of the Company common stock at a conversion rate of 29.0968 shares of common stock per $1,000 principal amount of Convertible Debentures, representing an initial effective conversion price of approximately $34.37 per share of common stock.”

Question: The financial reporting of a debt contract appears to be fairly straightforward. Assume, for example, that Brisbane Company borrows $400,000 in cash from a local bank on May 1, Year One. The face value of this loan is to be repaid in exactly five years. In the interim, interest payments at an annual rate of 6 percent will be made every six months beginning on November 1, Year One. What journal entries are appropriate to record a debt issued for a cash amount that is equal to the face value of the contract?

Answer: Brisbane receives $400,000 in cash but also accepts a noncurrent liability for the same amount.

Figure 14.1 May 1, Year One—Cash of $400,000 Borrowed on Long-term Note Payable

The first semiannual interest payment will be made on November 1, Year One. Because the 6 percent interest rate stated in the contract is for a full year, it must be halved to calculate the payment that covers the six-month intervals. Each of these cash disbursements is for $12,000 which is the $400,000 face value × the 6 percent annual stated interest rate × 1/2 year.

Figure 14.2 November 1, Year One—Payment of Interest for Six Months

By December 31, Year One, interest for two additional months (November and December) has accrued. This amount ($4,000 or $400,000 × 6 percent × 2/12 year) is recognized so that the financial statements prepared at that time will be presented fairly. No transaction occurs on that date but adjustment is necessary when preparing the Year One statements to report both the expense and the liability for these two months.

Figure 14.3 December 31, Year One—Accrual of Interest for Two Months

When the next $12,000 interest payment is made by Brisbane on May 1, Year Two, the recorded $4,000 liability is extinguished and interest for four additional months (January through April) is recognized. The appropriate expense for this period is $8,000 or $400,000 × 6 percent × 4/12 year. Mechanically, this payment could be recorded in more than one way but the following journal entry is probably the easiest to follow. Interest expense for the first two months was recorded in Year One with interest for the next four months recorded here in Year Two.

Figure 14.4 May 1, Year Two—Payment of Interest for Six Months

The interest payments and the recording process will continue in this same way until all five years have passed and the face value is paid.

Except for the initial entry, these events would be recorded in an identical fashion if Brisbane had signed this same note to acquire an asset such as a piece of machinery. No cash is involved in the beginning; the debt is incurred to acquire the property directly. The only reporting difference is that the asset replaces cash in the first journal entry above.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092978.html

Question: Bonds can be sold to a group of known investors or to the public in general. Often, companies will print bond indentures but not issue them until the money is needed. Thus, many bonds are sold on a day that falls between two interest dates. Payment must still be made to creditors as specified regardless of the length of time that the debt has been outstanding. If an interest payment is required by the contract, the debtor is legally obligated.

For example, assume that the Brisbane Company plans to issue bonds with a face value of $400,000 to a consortium of twenty wealthy individuals. As with the previous note arranged with the bank, these bonds pay a 6 percent annual interest rate with payments every May 1 and November 1. However, this sale is not finalized until October 1, Year One. The first six-month interest payment is still required on November 1 as stated in the contract. After just one month, the debtor will be forced to pay interest for six months. That is not fair and Brisbane would be foolish to agree to this arrangement. How does a company that issues a bond between interest payment dates ensure that the transaction is fair to both parties?

Answer: The sale of a bond between interest dates is extremely common. Thus, a standard system of aligning the first interest payment with the time that the debt has been outstanding is necessary. Brisbane will have to pay interest for six months on November 1 even though the cash proceeds from the bond have only been held for one month. At that time, the creditor receives interest for an extra five months.

Consequently, such bonds are normally issued for a stated amount plus accrued interest. The accrued interest is measured from the previous payment date and charged to the buyer. Later, when the first interest payment is made, the net effect reflects just the time that the bond has been outstanding. If issued on October 1, Year One, the creditors should pay for the bonds plus five months of accrued interest. Then, when Brisbane makes the first required interest payment on November 1 for six months, the net effect is interest for one month—the period since the date of issuance (six months minus five months).

Assume that the creditors buy these bonds on October 1, Year One, for face value plus accrued interest. Because five months have passed since the previous interest date (May 1), interest accrued on the bond as of the issuance date is $400,000 × 6 percent × 5/12 year or $10,000. The creditors pay $400,000 for the bond and an additional

$10,000 for the accrued interest to that date. Once again, the actual recording can be made in more than one way but the following seems easiest.

Figure 14.5 Issued Bond on October 1 at Face Value plus Accrued Interest Recognized for Five Months

After one more month passes, Brisbane makes the first interest payment of $12,000. However, interest expense of only $2,000 is actually recognized in the entry below. That is the appropriate amount of interest for one month ($400,000 × 6 percent × 1/12 year) to reflect the period that the bond has been outstanding. Interest of $10,000 for five months was collected initially; interest of $12,000 was paid for the entire six months; interest expense of $2,000 is the net result for that one month.

Figure 14.6 November 1, Year One—Payment of First Interest Payment

After this entry, the recording continues on following the same manner as the previous example for the note payable.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092979.html

Key Takeaway

Bond and note contracts include numerous terms to define the specific rights of both debtor and creditor. The face value and the payment patterns should be identified in these indentures as well as cash interest amounts and dates. Security agreements and other covenants are also commonly included. For debts that are issued at face value, interest is recorded as it is paid and also at the end of the year to reflect any accrued amount. Bonds are frequently issued between interest dates so an adjustment in the cash price must be made as well as in the recording of the first interest payment.

[1]The rate for interest on a debt can be identified by any of several terms. Cash rate, stated rate, contract rate, and coupon rate are all examples of the same information: the rate of interest to be paid by the debtor at specified times.

14.3 Accounting for Zero-Coupon Bonds

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Identify the characteristics of a zero-coupon bond.
2. Explain how interest is earned on a zero-coupon bond.
3. Understand the method of arriving at an effective interest rate for a bond.
4. Calculate the price of a zero-coupon bond and list the variables that affect this computation.
5. Prepare journal entries for a zero-coupon bond using the effective rate method.
6. Explain the term “compounding.”
7. Describe the theoretical problems associated with the straight-line method and identify the situation in which this method can still be applied.

Question: A wide array of bonds and other types of financial instruments can be purchased from parties seeking money. A zero-coupon bond is one that is popular because of its ease. The face value of a zero-coupon bond is paid to the investor after a specified period of time but no other cash payment is made. There is no stated cash interest. Money is received when the bond is issued and money is paid at the end of the term but no other payments are ever made. Why does any investor choose to purchase a zero-coupon bond if no interest is paid?

Answer: No investor would buy a note or bond that did not pay interest. That makes no economic sense. Because zero-coupon bonds are widely issued, some form of interest must be included. These bonds are sold at a discount below face value with the difference serving as interest. If a bond is issued for $37,000 and the company eventually repays the face value of $40,000, the additional $3,000 is interest on the debt. That is the charge paid for the use of the money that was borrowed. The price reduction below face value can be so significant that zero-coupon bonds are sometimes referred to as deep discount bonds.

To illustrate, assume that on January 1, Year One, a company offers a $20,000 two-year **zero-coupon bond** to the public. A single payment of $20,000 will be made to the bondholder on December 31, Year Two. According to the contract, no other cash is to be paid. An investor who wishes to make a 7 percent annual interest rate can mathematically compute the amount to pay to earn exactly that interest. The debtor must then decide whether to accept this offer.

Often, the final exchange price for a bond is the result of a serious negotiation process to determine the interest rate to be earned. As an example, the potential investor might offer an amount that equates to interest at an annual rate of 7 percent. The debtor could then counter by suggesting 5 percent with the two parties finally settling on a price that provides an annual interest rate of 6 percent. In the bond market, interest rates are the subject of intense

negotiations. After the **effective rate** (also called the yield or negotiated rate) has been established by the parties, the actual price of the bond is simply a mathematical computation.

Question: A $20,000 zero-coupon bond is being issued by a company. According to the indenture, it comes due in exactly two years. The parties have negotiated an annual interest rate to be earned of 6 percent. How is the price to be paid for a bond determined after an effective rate of interest has been established?

Answer: Determination of the price of a bond is a present value computation in the same manner as that demonstrated previously in the coverage of intangible assets. Here, a single cash payment of $20,000 is to be made by the debtor to the bondholder in two years. The parties have negotiated an annual 6 percent effective interest rate. Thus, a portion of the future cash ($20,000) serves as interest at an annual rate of 6 percent for this period of time. In a present value computation, total interest at the designated rate is calculated and subtracted to leave the present value amount. That is the price of the bond, often referred to as the principal. Interest is computed at 6 percent for two years and removed. The remainder is the amount paid for the bond.

Present Value of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvof1.htm

The present value of $1 in two years at an annual rate of interest of 6 percent is $0.8900. This can be found by table, by formula, or by use of an Excel spreadsheet[1]. Because the actual payment is $20,000 and not $1, the present value of the cash flows from this bond (its price) can be found as follows:

present value = future cash payment × $0.8900
present value = $20,000 × $0.8900
present value = $17,800

Bond prices are often stated as a percentage of face value. Thus, this bond is sold to the investor at “89” ($17,800/$20,000), which indicates that the price is 89 percent of the face value. The price is the future cash payments with the negotiated rate of interest removed. If the investor pays $17,800 today and the debtor returns $20,000 in two years, the extra $2,200 is the interest. And, mathematically, that extra $2,200 is exactly equal to interest at 6 percent per year.

The issuance is recorded through the following entry[2].

Figure 14.7

Figure 14.8 January 1, Year One—Zero-Coupon Bond Issued at Effective Annual Rate of 6 Percent

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093023.html

Question: This $20,000 zero-coupon bond is issued for $17,800 so that a 6 percent annual interest rate will be earned. As shown in the above journal entry, the bond is initially recorded at this principal amount. Subsequently, two problems must be addressed by the accountant. First, the company will actually have to pay $20,000. The $17,800 principal balance must be raised to that figure. The liability should be reported as $20,000 at the end of Year Two. Second, the $2,200 difference between the amount received and the eventual repayment ($20,000 less $17,800) has to be recognized as interest for these two years. The additional payment is the cost of the debt, the interest. To arrive at fairly presented figures, these two problems must be resolved. How is a zero-coupon bond reported in the period after its issuance?

Answer: In Chapter 11 "In a Set of Financial Statements, What Information Is Conveyed about Intangible Assets?", the effective rate method of reporting a present value figure over time was demonstrated. It solves both of the accounting problems mentioned here. The debt balance is raised gradually to the face value and interest of 6 percent is reported each year over the entire period.

Interest for Year One should be the $17,800 principal balance multiplied by the effective interest rate of 6 percent to arrive at interest expense for the period of $1,068. However, no payment is made. Thus, this interest is compounded—added to the principal. Interest that is recognized but not paid at that time must be compounded.

Figure 14.9 December 31, Year One—Interest on Zero-Coupon Bond at 6 Percent Rate[3]

The compounding of this interest raises the principal by $1,068 from $17,800 to $18,868. The balances to be reported in the financial statements at the end of Year One are as follows:

Year One—Interest Expense (Income Statement)	$1,068
December 31, Year One—Bond Payable (Balance Sheet)	$18,868

Interest for Year Two is 6 percent of the new liability balance of $18,868 or $1,132 (rounded). The principal

is higher in this second year because of the compounding (addition) of the first year interest. If the principal increases, subsequent interest must also go up.

Figure 14.10 December 31, Year Two—Interest on Zero-Coupon Bond at 6 Percent Rate

Note that the bond payable balance has now been raised to $20,000 as of the date of payment ($17,800 + $1,068 + $1,132). In addition, interest expense of $2,200 ($1,068 + $1,132) has been recognized over the two years. That was exactly 6 percent of the principal in each of the two years. Total interest reported for this zero-coupon bond is equal to the difference between the amount received by the debtor and the face value repaid. Both of the accounting problems have been resolved through use of the effective rate method.

The $17,800 price of the bond was computed mathematically based on

- the cash payment ($20,000),
- the time periods (two),
- the effective rate of interest (the 6 percent negotiated rate),
- the pattern of cash flows (a single payment in the future).

If interest is then recognized each period based on this same set of variables, the resulting numbers will reconcile. Interest expense for the two years has to be $2,200 and the final liability balance must come back to $20,000.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093003.html

Exercise

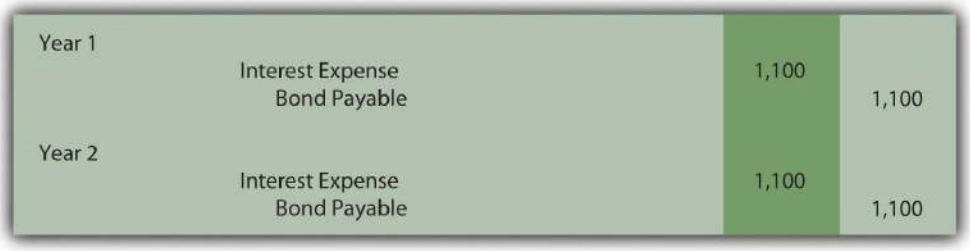
Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092980.html

Question: This bond was sold at the present value of its future cash flows based on a rate of interest negotiated by the parties involved. Interest was then recognized periodically by applying the effective rate method. Is the effective rate method the only acceptable technique that can be used to compute and report interest when the face value of a debt differs from its issue price?

Answer: Interest can also be calculated for reporting purposes by a simpler approach known as the straight-line method. Using this technique, an equal amount of the discount is assigned to interest each period over the life of

the bond. This zero-coupon bond was sold for $2,200 below face value to provide interest to the buyer. Payment will be made in two years. The straight-line method simply recognizes interest of $1,100 per year ($2,200/2 years).

Figure 14.11 December 31, Years One and Two—Interest on Zero-Coupon Bond at 6 Percent Rate—Straight-Line Method



Once again, the bond payable balance has been raised to $20,000 at the end of the second year ($17,800 + $1,100 + $1,100) and total interest expense over the life of the bond equals the $2,200 discount ($1,100 + $1,100). However, a question should be raised as to whether the information reported under this method is a fairly presented portrait of the events that took place. Although the bond was sold to earn 6 percent annual interest, this rate is not reported for either period.

Year One: $1,100 interest/$17,800 principal = 6.2 percent

Compounding of the interest raises the principal by $1,100 to $18,900

Year Two: $1,100 interest/$18,900 principal = 5.8 percent

In reality, the parties established an annual rate of 6 percent for the entire two-year period. When applying the straight-line method, this actual rate is not shown for either year. Furthermore, the reported interest rate appears to float (6.2 percent to 5.8 percent) as if a different rate was negotiated for each year. That did not happen; there was a single 6 percent interest rate agreed-upon by the debtor and the creditor.

The straight-line method does not reflect the reality of the transaction. However, it can still be applied according to U.S. GAAP but only if the reported results are not materially different from those derived using the effective rate method.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093004.html

Key Takeaway

Zero-coupon bonds pay no cash interest. They are sold at a discount to provide interest to the buyer. The price of the bond is determined by computing the present value of the required cash flows using the effective interest rate negotiated by the two parties. Present value represents the principal of the debt with all future interest mathematically removed.

The bond is recorded at this principal. Interest is subsequently determined each period based on the effective rate. Because no cash interest is paid, the entire amount recognized as interest must be compounded (added) to the principal. The straight-line method can also be used to record interest if the resulting numbers are not materially different from the effective rate method. This alternative assigns an equal amount of the discount to interest each period over the bond's life.

[1]As explained in Chapter 11 "In a Set of Financial Statements, What Information Is Conveyed about Intangible Assets?", the present value of $1 can be mathematically determined using the formula $\$1/(1 + i)^n$. Here, *i* is 0.06 and *n* is two periods. Present value can also be determined using an Excel spreadsheet. The present value of $1 at 6 percent in two periods is found by typing the following formula into a cell: =PV(.06,2,,1,0).

[2]The entry shown here can also be recorded in a slightly different manner. As an alternative, the liability is recorded at its face value of $20,000 with a separate discount of $2,200 also included. The discount serves as a contra account to reduce the net liability balance to its principal amount. Although mechanically different, the liability is still shown as $17,800.

[3]If a discount is recorded in the initial entry as is shown in the previous footnote, the credit here is to the Discount account and not directly to the bond payable. The contra account is reduced so the net liability balance increases. Thus, overall reporting of the interest and the liability is not impacted by the method used in recording the issuance of the bond.

14.4 Pricing and Reporting Term Bonds

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Understand the difference between a stated cash interest rate in a debt contract and an effective interest rate negotiated by the debtor and creditor.
2. Compute the price of a term bond when the stated cash interest rate is different from the effective interest rate.
3. Determine the amount of interest to be compounded each period when the stated cash interest rate is different from effective interest rate.
4. Prepare all journal entries for a term bond when the stated cash interest rate is different from the effective interest rate.

Question: Although zero-coupon bonds are popular, notes and most bonds actually do pay a stated rate of cash interest, one that is specified in the contract. If the buyer and the seller negotiate an effective rate of interest that is the same as this stated rate, an amount equal to face value is paid for the bond. If the stated interest to be paid is 7 percent each year and a negotiated annual rate of 7 percent is accepted by the parties, the bond is issued for face value. No discount or premium results; the debtor and creditor are satisfied with the interest being paid. The effective rate method is not needed because the cash interest and the effective interest are the same—7 percent is paid and recognized as interest.

However, the negotiated rate often differs from the cash rate stated in a bond contract. Market interest rate conditions change quickly. The interest that creditors demand will often shift between the printing of the indenture and the actual issuance day. Or the financial reputation of the company might vary during this time. Information travels so quickly in this technology age that news about companies—both good and bad—spreads rapidly throughout the business community.

To illustrate, assume that Smith Corporation decides to issue $1 million in bonds to the public on January 1, Year One. These bonds come due in four years. In the interim, interest at a stated cash rate of 5 percent will be paid each year starting on December 31, Year One. These are term bonds because interest is conveyed periodically by the debtor but the entire face value is not due until the end of the term.

No investors can be found who want to purchase Smith Corporation bonds with only a 5 percent annual return. Therefore, in setting an issuance price, annual interest of 6 percent is negotiated. Possibly, interest offered by other similar companies is 6 percent so that Smith had to match this rate to entice investors to buy its bonds. Or some event has taken place recently that makes Smith seem slightly more risky causing potential creditors to demand a higher rate of return. A list of market conditions that can impact the price of a bond would be almost

unlimited. How is the price of a bond calculated when the stated cash rate is different from the effective rate that is negotiated by the two parties involved?

Answer: The pricing of a bond always begins by identifying the cash flows established by the contract. These amounts are set and not affected by the eventual sales price. The debtor is legally obligated to make these payments regardless of whether the bond is sold for $1 or $10 million.

Here, Smith Corporation must pay $50,000 per year in interest ($1 million × 5 percent) for four years and then the $1 million face value:

Cash Flows in Bond Contract
$50,000 annually for four years
$1,000,000 in four years

After the cash flows are identified, the present value of each is calculated at the negotiated rate. These present values are then summed to get the price to be paid for the bond. The $50,000 interest payments form an annuity since equal amounts are paid at equal time intervals. Because this interest is paid at the end of each period starting on December 31, Year One, these payments constitute an ordinary annuity[1]. As determined by table, formula, or Excel spreadsheet, the present value of an ordinary annuity of $1 at an effective annual interest rate of 6 percent over four years is $3.46511[2]. Thus, the present value of the four interest payments is $50,000 times $3.46511 or $173,256 (rounded). Note that the present value computation requires the multiplication of one annuity payment ($50,000) rather than the total of the interest payments ($200,000).

Present Value of an Ordinary Annuity of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvofordinaryannuity.htm

The second part of the cash flows promised by this bond is a single payment of $1 million in four years. The present value of $1 in four years at a 6 percent annual rate is $0.79209 so the present value of the entire $1 million is $792,090.

Present Value of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvof1.htm

The total present value of the cash flows promised by this bond at an annual 6 percent rate for four years is $173,256 (cash interest) plus $792,090 (face value) or $965,346. Smith will receive this amount on January

1, Year One and pays back $50,000 per year for four years followed by a single payment of $1 million. Mathematically, that is equivalent to earning a 6 percent rate of interest each year for four years.

Figure 14.12 January 1, Year One—Term Bonds Issued at an Effective Rate of 6 Percent

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092981.html

Question: The debtor here has the same accounting problems that were discussed in connection with the previous zero-coupon bonds. First, the recorded principal of this term bond must be raised gradually from $965,346 to the $1 million face value over these four years. Second, the cash interest of 5 percent paid each year has to be adjusted to the annual 6 percent effective rate negotiated by the two parties. How does a debtor report a bond payable over its life if the stated interest rate and the effective rate differ?

Answer: At the end of Year One, Smith Corporation pays $50,000 cash interest to the bondholders ($1 million face value × the 5 percent stated rate) as specified in the contract. However, reported interest on this debt must be recognized at the agreed upon rate of 6 percent that led to the initial principal payment of $965,346. The $34,654 discount below face value ($1 million less $965,346) was accepted by Smith (the debtor) as a means of increasing the actual annual rate of return from 5 percent to 6 percent.

The effective rate is reflected in the financial statements by recognizing interest in Year One of $57,921 (rounded), which is the $965,346 principal times 6 percent. The $7,921 difference between the effective interest expense of $57,921 and the cash interest payment of $50,000 will eventually be paid but not until the end of the four-year term when $1 million rather than $965,346 is conveyed to the bondholders. Therefore, at the end of Year One, this extra $7,921 is compounded. Only the portion of this interest that is not being paid is added to the principal. Earlier, with the zero-coupon bond, the entire amount of interest was compounded because no cash interest payment was made.

Figure 14.13 December 31, Year One—Payment of Cash Interest at 5 Percent Rate

Figure 14.14 Compounding Adjustment to Bring Interest to Effective Annual Rate of 6 Percent[3]

Interest Expense	7,921	
Bond Payable		7,921

Interest expense reported on the income statement for Year One of $57,921 ($50,000 + $7,921) equals the 6 percent effective rate times the principal of the debt for that period. The liability reported for the bond payable at the end of Year One has begun to move closer to the $1 million face value. It is now $973,267 ($965,346 + $7,921) as a result of the compounding.

Reported figures for the remaining three years of this bond contract can be computed to verify that the ending balance does grow to $1 million by the time of payment.

Figure 14.15 Reported Bond Figures for the Remaining Three Years until Maturity[4]

	Year Two	Year Three	Year Four
Beginning Bond Principal	$973,267	$981,663	$990,563
Effective Rate	6%	6%	6%
Interest Expense (rounded)	58,396	58,900	59,437
Stated Cash Interest	50,000	50,000	50,000
Interest Compounded (added to principal)	8,396	8,900	9,437
Ending Bond Principal	981,663	990,563	1,000,000

Through the use of the effective rate method, interest expense of 6 percent is recognized each period and the principal balance of the liability gradually grows to equal the face value of the bond.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093005.html

Key Takeaway

In the issuance of a term bond, the stated cash interest rate is often different from the effective interest rate negotiated by the creditor and the debtor. To compute the amount to be exchanged for this bond, the cash flows must be determined based on the specifics of the contract and their present value calculated. The resulting total is the amount paid so that the agreed upon rate of interest is earned over the life of the bond. The bond is initially recorded at present value to reflect its principal at that time. Cash interest payments are recorded thereafter and then adjusted based on the effective interest rate. The interest rate stated in the contract times the face value provides the amount of the cash payments. The principal

times the effective rate gives the interest to be recognized for the period. The difference in the effective interest and the cash payment is compounded (added to the principal of the debt).

[1]As mentioned in earlier discussions about intangible assets, an annuity with payments made at the beginning of each period is known as an annuity due. If the interest here had been paid starting on January 1, Year One, the payments would form an annuity due rather than an ordinary annuity. The cash flow pattern for notes and bonds is more likely to be in the form of an ordinary annuity since interest is not typically paid in advance.

[2]The mathematical formula to determine the present value of an ordinary annuity of $1 is $(1 – 1/[1 + i]^n)/i$, where i is the appropriate interest rate (6 percent in this illustration) and n is the number of payment periods (four). If using an Excel spreadsheet, the present value of a $1 per period ordinary annuity for four periods at an annual rate of interest of 6 percent can be found by typing the following data into a cell: =PV(.06,4,1,,0).

[3]These two entries are often combined. Students should use one entry or two depending on which is easiest to understand.

[4]Interest expense for the final year has been increased by $3 so that the final bond payable balance is exactly equal to the $1 million that must be paid. Slight adjustments of this type are common to compensate for numbers having been rounded.

14.5 Issuing and Accounting for Serial Bonds

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Define a "serial bond."
2. Identify the steps to calculate the price of a bond and provide the proper accounting.
3. Record a serial bond over its life.
4. Explain the periodic determination of interest for a serial bond and the amount that must be compounded each period.

Question: The previous section of this chapter looked at term bonds. Interest was paid each period although payment of the face value did not occur until the end of the four-year term. How does this process differ for a serial bond where both interest and a portion of the face value are paid periodically?

To illustrate, assume that Smith Corporation issues a four-year, $1 million serial bond on January 1, Year One, paying a 5 percent stated interest rate at the end of each year on the unpaid face value for the period. The bond contract specifies that $250,000 of the face value is also to be paid annually at the same time as the interest. Smith and the potential investors negotiate for some time and finally agree on a 6 percent annual effective rate. What accounting is appropriate for a serial bond?

Answer: In reporting a term bond, five steps were taken:

1. The cash flows required by the bond contract are listed.
2. The total present value of these cash flows is computed using the effective rate of interest negotiated by the parties. Present value mathematically removes all future interest at the appropriate rate. Only the principal remains. Thus, this resulting figure is the exact amount to be paid so that the agreed-upon interest rate is earned over the life of the bond.
3. The bond is recorded at the principal (present value) amount paid by the investors.
4. The debtor pays interest periodically on the dates indicated in the contract.
5. The effective rate method is applied. Interest to be reported for each period is determined by multiplying the principal balance of the bond by the effective interest rate. The cash interest figure is adjusted to this calculated amount with the difference compounded (added to the principal)[1].

This same process is applied when a serial bond is issued. The sole difference is that additional payments are made periodically to reduce the face value of the debt.

For the Smith Corporation serial bond described above, the following steps are required.

Identify cash flows specified in the bond contract. As a serial bond, Smith is required to pay $250,000 to reduce the face value each year. In addition, the unpaid face value for Year One is $1 million so the 5 percent stated rate necessitates a $50,000 year-end interest payment. Following the first principal payment, the remaining face value is only $750,000 throughout the second year. Thus, the interest payment at the end of that period falls to $37,500 ($750,000 × 5 percent). Based on the contract, the cash flows required by this bond are as follows.

Figure 14.16 Cash Payments Required by Bond Contract

Year	Beginning Face Value	Cash Interest Rate	Cash Interest	Principal Payment	Ending Face Value
One	$1,000,000	5%	$50,000	$250,000	$750,000
Two	750,000	5%	37,500	250,000	500,000
Three	500,000	5%	25,000	250,000	250,000
Four	250,000	5%	12,500	250,000	-0-

Determine present value of the cash flows. These required cash flows can be organized in either of two ways.

1. First, they can be viewed as an ordinary annuity of $250,000 per year for four years plus four separate single amounts of $50,000 (one year), $37,500 (two years), $25,000 (three years) and $12,500 (four years).
2. Second, the payments of the face value and interest can be combined for each year so that there are four separate single amounts of $300,000 (one year), $287,500 (two years), $275,000 (three years), and $262,500 (four years).

The same cash flows are being described so the present value of both patterns will be the same $977,714 whichever approach is followed.

Present Value of an Ordinary Annuity of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvofordinaryannuity.htm

Present Value of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvof1.htm

Figure 14.17 Computation of Present Value of Serial Bond—First Pattern of Cash Flows

Computation of Present Value of Serial Bond—First Pattern of Cash Flows

Present value of an ordinary annuity of $250,000 at a 6 percent annual interest rate for four years:

$250,000 (for four years) × 3.46511 = $866,278 (rounded)

Present value of four different single amounts at a 6 percent annual interest rate in each of the next four years:

$50,000 (in one year)	× .94340	=	$47,170
$37,500 (in two years)	× .89000	=	33,375
$25,000 (in three years)	× .83962	=	20,990 (rounded)
$12,500 (in four years)	× .79209	=	9,901 (rounded)
Total present value of single payments			$111,436

Total present value of these cash flows: $866,278 for the ordinary annuity plus $111,436 for the four single payments provides a total present value for all required cash flows of $977,714. If these 5 percent $1 million face value bonds are sold for $977,714 and cash payments are made based on the contract terms, interest at an effective rate of 6 percent is being earned over each of these four years.

Figure 14.18 Computation of Present Value of Serial Bond—Second Pattern of Cash Flows

Computation of Present Value of Serial Bond—Second Pattern of Cash Flows

Present value of four different single amounts at a 6 percent annual interest rate in each of the next four years:

$300,000 (in one year)	× .94340	=	$283,020
$287,500 (in two years)	× .89000	=	255,875
$275,000 (in three years)	× .83962	=	230,895 (rounded)
$262,500 (in four years)	× .79209	=	207,924 (rounded)
Total present value of cash flows			$977,714

Record the principal amount received for the bond. Based on this computation, if $977,714 is paid for this four-year $1 million serial bond with an annual stated rate of 5 percent, the effective rate being earned by these cash flows will be 6 percent per year. Accepting a discount of this amount increases the effective rate of interest from 5 percent to exactly 6 percent. The issuance of the bond is recorded through the following journal entry.

Figure 14.19 January 1, Year One—Issuance of $1 Million Serial Bonds Paying 5 Percent Annual Interest with Effective Negotiated Rate of 6 Percent

Cash	977,714	
Bonds Payable		977,714

Payment of stated cash interest at 5 percent annual rate. Because of the terms specified in the contract, interest of $50,000 will be paid at the end of Year One, $37,500 at the end of Year Two, and so on as the face value is also paid. The Year One payment is recorded as follows.

Figure 14.20 December 31, Year One—Payment of 5 Percent Interest on Serial Bond

Interest Expense	50,000	
Cash		50,000

This same entry is made each year except that the payments will fall to $37,500, $25,000, and finally $12,500.

Effective rate method is applied to recognize negotiated interest rate. For the first year, the principal balance is the original issuance price of $977,714. The yield rate decided by the two parties was 6 percent so the interest to be recognized is $58,663 (rounded). As shown in the above entry, the cash interest paid is only 5 percent of the face value or $50,000. The extra interest for the period ($8,663) is compounded—added to the principal of the bond payable.

Figure 14.21 December 31, Year One—Adjustment of Interest from Cash Rate to Effective Rate

Interest Expense	8,663	
Bonds Payable		8,663

In addition, as a serial bond, the first payment of the face value is made at the end of Year One.

Figure 14.22 December 31, Year One—Payment on Face Value of Serial Bond

Bonds Payable	250,000	
Cash		250,000

Whether it is a term bond or a serial bond, the process is the same. All the amounts to be recorded over the four-year life of this bond can be computed to verify that the final payment does remove the debt precisely.

Figure 14.23 Balances to be Reported Over the Four-year Life of Serial Bond[2]

	Year One	Year Two	Year Three	Year Four
Beginning Principal Balance	$977,714	$736,377	$493,060	$247,644
Effective Annual Interest Rate	6%	6%	6%	6%
Interest to Be Recognized (principal times effective rate)	58,663	44,183	29,584	14,856
Cash Interest (face value times stated cash rate)	50,000	37,500	25,000	12,500
Compound Interest (difference)	8,663	6,683	4,584	2,356
Face Value Payment	250,000	250,000	250,000	250,000
Ending Principal Balance (beginning balance plus compound interest less face value payment)	736,377	493,060	247,644	-0-

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093006.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092982.html

Key Takeaway

The issuance price for bonds can be computed and the subsequent accounting can be outlined in five general steps: determining the cash payments required by the contract, calculating the present value of those cash flows at the negotiated effective rate, recording the bond at this present value amount, recording each periodic cash interest payment, and adjusting the stated cash interest payments to the effective interest rate. A serial bond follows this process although some part of the face value is also paid each period. The principal goes up each period as a result of interest compounding. However, for a serial bond, it also goes down because of the periodic face value payments.

[1]The series of steps shown here is also used when a bond is issued at a premium above face value. If the effective rate negotiated by the parties is below the stated cash rate, the amount paid for the bond (the present value) will be above face value rather than below. In effect, the high rate of cash interest makes the bond more valuable. Thereafter, the effective interest recognized each period will be below the cash interest. Adjustment is made to lower the cash interest rate to the effective rate, which also reduces the reported principal balance moving it toward face value. Thus, when the negotiated rate is below the stated cash rate, a premium is created rather than a discount. The subsequent accounting process is not affected except that the increases and decreases are reversed from the examples shown here for a discount.

[2]The interest recognized in the final year has been adjusted by $3 to compensate for the rounding of several computations so that the liability balance drops to exactly zero after four years.

14.6 Bonds with Other Than Annual Interest Payments

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Realize that interest payments are frequently made more often than annually such as quarterly or semiannually.
2. Determine the stated interest rate, the effective interest rate, and the number of time periods to be used in a present value computation when interest payments cover a period of time other than a year.
3. Compute the stated cash interest and the effective interest when interest payments are made more frequently than once each year.
4. Prepare journal entries for a bond with interest payments made quarterly or semiannually or at some other period shorter than once each year.

Question: In the previous examples, both the interest rates and payments covered a full year. How is this process affected if interest payments are made at other time intervals such as each quarter or semiannually?

As an illustration, assume that on January 1, Year One, an entity issues bonds with a face value of $500,000 that will come due in six years. Cash interest payments at a 6 percent annual rate are required by the contract but the actual disbursements are made every six months on June 30 and December 31. The debtor and the creditor negotiate an effective interest rate of 8 percent per year. How is the price of a bond determined and the debt reported if interest payments occur more often than once each year?

Answer: None of the five basic steps for issuing and reporting a bond is changed by the frequency of the interest payments. However, both the stated cash rate and the effective rate must be set to agree with the time interval between the payment dates. The number of periods used in the present value computation is also based on the length of this interval.

In this example, interest is paid semiannually so each time period is only six months in length. The stated cash rate to be used for that period is 3 percent or 6/12 of 6 percent. Similarly, the effective interest rate is 4 percent or 6/12 of 8 percent. Both of these interest rates must align with the specific amount of time between payments. Over the six years until maturity, there are twelve of these six-month periods of time.

Thus, the cash flows will be the following:

- *Interest*: $500,000 face value times 3 percent stated rate or $15,000 every six months for twelve periods. Equal payments are made at equal time intervals making this an annuity. Payments are made at the end of each period so it is an ordinary annuity.

Plus

- *Face value*: $500,000 at the end of these same twelve periods. This payment is a single amount.

As indicated, the effective rate to be used in determining the present value of these cash payments is 4 percent per period or 6/12 times 8 percent.

Present Value of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvof1.htm

Present Value of an Ordinary Annuity of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvofordinaryannuity.htm

- The present value of $1 in twelve periods at an effective rate of 4 percent per period is $0.62460.
- The present value of an ordinary annuity of $1 for twelve periods at an effective rate of 4 percent per period is $9.38507.
- The present value of the face value cash payment is $500,000 times $0.62460 or $312,300.
- The present value of the cash interest payments every six months is $15,000 times $9.38507 or $140,776 (rounded).
- Total present value of the cash flows set by this contract is $312,300 plus $140,776 or $453,076. The bond is issued for the present value of $453,076 so that the agreed-upon effective rate of interest (8 percent for a year or 4 percent for each six-month period) is being earned over the entire life of the bond.

Figure 14.24 January 1, Year One—Issuance of $500,000 Bond to Yield Effective Rate of 4 Percent Semiannually

On June 30, Year One, the first $15,000 interest payment is made. However, the effective rate of interest for that period is the principal of $453,076 times the six-month negotiated rate of 4 percent or $18,123 (rounded). Therefore, the interest to be compounded for this period is $3,123 ($18,123 interest less $15,000 payment). That is the amount of interest recognized but not paid on this day.

Figure 14.25 June 30, Year One—Cash Interest Paid on Bond

Figure 14.26 June 30, Year One—Interest on Bond Adjusted to Effective Rate

For the second six-months in Year One, the compound interest recorded above raises the bond's principal to $456,199 ($453,076 principal for first six months plus $3,123 in compound interest). Although another $15,000 in cash interest is paid on December 31, Year One, the effective interest for this six-month period is $18,248 (rounded) or $456,199 times 4 percent interest. Compound interest recognized for this second period of time is $3,248 ($18,248 less $15,000).

Figure 14.27 December 31, Year One—Cash Interest Paid on Bond

Figure 14.28 December 31, Year One—Interest on Bond Adjusted to Effective Rate

The Year One income statement will report interest expense of $18,123 for the first six months and $18,248 for the second, giving a total for the year of $36,371.

The December 31, Year One, balance sheet reports the bond payable as a noncurrent liability of $459,447. That is the original principal (present value) of $453,076 plus compound interest of $3,123 (first six months) and $3,248 (second six months).

Once again, interest each period has been adjusted from the cash rate stated in the contract to the effective rate negotiated by the two parties. Here, the annual rates had to be halved because payments were made semiannually. In addition, as a result of the compounding process, the principal balance is moving gradually toward the $500,000 face value that will be paid at the end of the bond term.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093024.html

Key Takeaway

Bonds often pay interest more frequently than once a year. If the stated cash rate and the effective rate differ, present value is still required to arrive at the principal amount to be paid. However, the present value computation must be adjusted to reflect the different pattern of cash flows. The length of time between payments is considered one period. The effective interest rate is then determined for that particular period of time. The number of time periods used in calculating present value is also based on this same definition of a period. The actual accounting and reporting are not affected, merely the method by which the interest rates and the number of periods are calculated.

Talking with a Real Investing Pro (Continued)

Following is a continuation of our interview with Kevin G. Burns.

Question: Assume that you are investigating two similar companies because you are thinking about recommending one of them to your clients as an investment possibility. The financial statements look much the same except that one of these companies has an especially low amount of noncurrent liabilities while the other has a noncurrent liability total that seems quite high. Which company are you most likely to recommend?

Kevin Burns: I have done well now for many years by being a conservative investor. My preference is always the company that is debt free or as close to debt free as possible. I do not like leverage, never have. I even paid off my own home mortgage more than ten years ago.

On the other hand, long-term liabilities have to be analyzed as they are so very common. Is any of the debt convertible so that it could potentially dilute everyone's ownership in the company? Is the company paying a high stated rate of interest? Why was the debt issued? In other words, how did the company use the money it received? As with virtually every area of a set of financial statements, you have to look behind the numbers to see what is actually happening. If the debt was issued at a low interest rate in order to make a smart acquisition, I am impressed. If the debt has a high interest rate and the money was not well used, that is not attractive to me at all.

Video Clip

" href="http://app.wistia.com/embed/medias/d1abbb3986" class="replaced-iframe">(click to see video)

Unnamed Author talks about the five most important points in Chapter 14 "In a Set of Financial Statements, What Information Is Conveyed about Noncurrent Liabilities Such as Bonds?".

14.7 End-of-Chapter Exercises

Questions

1. What are some of the risks for a company of holding debt?
2. What is bankruptcy?
3. Name three advantages of financing with debt.
4. Define “note.”
5. Define “bond.”
6. How do notes and bonds differ?
7. Define “face value” of a note or bond.
8. What are some of the ways a note or bond repayment can be structured?
9. Define “security.”
10. Define “debenture.”
11. Why are covenants included in loan agreements?
12. Define “zero coupon” bond.
13. Define “effective interest rate.”
14. How do a term bond and a serial bond differ?

True or False

1. ____ Zero coupon bonds are so named because companies do not record interest expense on them.
2. ____ One advantage of debt financing is that interest is tax deductible.
3. ____ A company’s creditors can force it into bankruptcy if it can’t pay its debts.
4. ____ Banks typically charge stronger companies higher interest rates than weaker ones because the strong companies can better afford it.
5. ____ Financial leverage refers to a company’s ability to pay its debts off early, avoiding interest payments.
6. ____ Debt covenants exist to product the creditor.
7. ____ When a company issues a bond between interest dates, the first interest payment will be lower.
8. ____ Companies must use the effective interest rate method to compute and record interest.
9. ____ A debenture is a debt that is not secured.
10. ____ The maturity value of a bond is amount that the company will need to repay.

Multiple Choice

1. Which of the following is **not** a type of bond?

    1. Maturity
    2. Zero coupon
    3. Serial
    4. Term

2. Kitten Inc. issued $105,000 in bonds on September 1. The annual interest rate is 6 percent and interest is paid on the bonds every June 30 and December 31. When the bonds are issued on September 1, how much cash will the company collect?

    1. $105,000
    2. $1,050
    3. $106,050
    4. $103,950

3. Which of the following is an agreement which debtors sign as part of getting a loan that serves to protect a creditor?

    1. Security
    2. Term bond
    3. Leverage
    4. Covenant

4. Which of the following is **not** a reason companies borrow money?

    1. To raise needed funds
    2. Interest is tax deductible
    3. Creditors have no control over the company
    4. Creditors do not become owners in the company

5. Which of the following refers to an asset a creditor could take from a debtor if the debtor fails to pay back a loan?

    1. Interest
    2. Security
    3. Covenant
    4. Maturity

6. Krystal Corporation issued $100,000 with a 4 percent stated rate of interest on January 1. The effective rate of interest on that date was 6 percent and interest is paid semiannually on June 30 and December 31. The bonds mature ten years from now. What amount would bondholders be willing to pay Krystal on January 1 for the bonds?

    1. $100,000

2. $85,123
3. $85,280
4. $140,000

Problems

1. Joni Corporation borrows $500,000 from Friendly Bank on February 1, 20X8. The principal will not be repaid until the end of six years, but interest payments are due every February 1 and August 1. The interest rate is 4 percent annually. Record the journal entry necessary for each of the following:
    1. The signing of the loan
    2. The payment of interest on August 1, 20X8
    3. The interest accrual on December 31, 20X8
    4. The payment of interest on February 1, 20X9
2. Colson Corporation issues bonds to finance an expansion of its hot swimwear line. The $50,000 in bonds is issued on April 1, 20X4 and pay interest in the amount of 5 percent annually. Interest payments are made semiannually, every April 1 and October 1. Record the journal entry necessary for each of the following:
    1. The issuance of the bonds
    2. The payment of interest on October 1, 20X4
    3. The interest accrual on December 31, 20X4
    4. The payment of interest on April 1, 20X4
3. Assume the same facts as in problem 2 above, but instead of issuing the bonds on April 1, 20X4, the bonds are issued on July 1, 20X4. Record the journal entry necessary for each of the following.
    1. The issuance of the bonds
    2. The payment of interest on October 1, 20X4
    3. The interest accrual on December 31, 20X4
    4. The payment of interest on April 1, 20X4
4. Keller Corporation offers a zero-coupon bond of $80,000 on January 1, 20X5. It will come due on December 31, 20X7. Potential bondholders and Keller negotiate an annual interest rate of 7 percent on the bonds.
    1. Determine the amount the bondholders would be willing to pay on January 1, 20X5.
    2. Record the issuance of the bonds on January 1, 20X5.
    3. Record the accrual of interest on the bond on December 31, 20X5.
    4. Record the accrual of interest on the bond on December 31, 20X6.
    5. Record the accrual of interest on the bond on December 31, 20X7.
    6. Record the redemption of the bond on December 31, 20X7.
5. Jaguar Corporation issues term bonds with a face value of $300,000 on January 1, 20X1. The bonds have a

stated rate of interest of 7 percent and a life of four years. They pay interest annually on December 31. The market value on the date of issuance was 9 percent. Record all necessary journal entries on the following dates.

1. How much would investors be willing to pay for the bonds on January 1, 20X1?
2. Determine the amount of each annual cash interest payment.
3. How much interest expense would Jaguar record for each payment?

6. Collins Company issues term bonds with a face value of $100,000 on May 1, 20X3. The bonds have a stated rate of interest of 4 percent and a life of ten years. They pay interest semiannually on June 30 and December 31. The market value on the date of issuance was 6 percent. Record all necessary journal entries on the following dates:

    1. The issuance of the bonds on May 1, 20X3
    2. The payment of interest on June 30, 20X3
    3. The payment of interest on December 31, 20X3

7. Fitzgerald Corporation issues a $3,000,000 in serial bonds on August 1, 20X2. The terms are as follow:

    - Time to maturity: three years
    - Stated and effective interest rate: 7 percent, paid annually on August 1
    - Principal to be repaid at the end of each year: $1,000,000
    - Determine the journal entries for each of the following dates:

    1. The issuance of the bonds on August 1, 20X2
    2. Accrual of interest expense on December 31, 20X2
    3. Payment of principal and interest on August 1, 20X3
    4. Accrual of interest expense on December 31, 20X3
    5. Payment of principal and interest on August 1, 20X4
    6. Accrual of interest expense on December 31, 20X4
    7. Payment of principal and interest on August 1, 20X5

8. Chyrsalys Corporation issues $4,000,000 in serial bonds on January 1, 20X5, with a stated interest rate of 3 percent. On this date, investors demand an effective interest rate of 4 percent. The bond terms specify that interest and $2,000,000 in principal will be paid on January 1, 20X6 and 20X7.

    1. What amount would investors be willing to pay for the bonds on January 1, 20X5?
    2. What would interest expense be on December 31, 20X5?
    3. What amount of cash would Chyrsalys pay investors on January 1, 20X6?
    4. What would interest expense be on December 31, 20X6?
    5. What amount of cash would Chyrsalys pay investors on January 1, 20X7?

Comprehensive Problem

This problem will carry through several chapters, building in difficulty. It allows students to continuously practice skills and knowledge learned in previous chapters.

In Chapter 13 "In a Set of Financial Statements, What Information Is Conveyed about Current and Contingent Liabilities?", you prepared Webworks statements for January. They are included here as a starting point for February.

Figure 14.29 Webworks Financial Statements

Webworks
Income Statement
As of January 31

Revenue	$16,000
Cost of Goods Sold	(8,664)
Gross Profit	7,336
Deprec. and Amort. Expense	(363)
Other Expenses and Losses	(3,800)
Investment Income	150
Earning before Tax	3,323
Tax Expense	(1,000)
Net Income	$2,323

Figure 14.30

Webworks
Stmt. of Retained Earnings
As of January 31

Retained Earnings, January 1	$12,290
Net Income	2,323
Retained Earnings, January 31	$14,613

Figure 14.31

Webworks
Balance Sheet
January 31

Assets		**Liabilities**	
Current		**Current**	
Cash	$5,150	Accounts Payable	$2,750
Accounts Receivable	1,600	Salaries Payable	200
Less Allowance for Doubtful Accounts	(160)	Unearned Revenue	450
Net Accounts Receivable	1,440		
Merchandise Inventory	2,423		
Supplies Inventory	40		
Prepaid Rent	400		
Prepaid Advertising	100		
Total Current Assets	$9,553	Total Current Liabilities	$ 3,400
Property, Plant, and Equipment			
Equipment	$7,000		
Less Accumulated Depreciation	(1,022)		
Furniture	1,000		
Less Accumulated Depreciation	(68)		
Total P, P, and E	$6,910		
Other Noncurrent Assets		**Owners' Equity**	
Available for Sale Securities	$1,575	Capital Stock	$2,000
Licensing Agreement, Net	1,800	Retained Earnings	14,613
		Other Accumulated Comprehensive Income:	
		Unrealized Loss on Available for Sale Securities	(175)
		Total Owners' Equity	$16,438
		Total Liabilities & Owners' Equity	$19,838
Total Assets	$19,838		

The following events occur during February:

a. Webworks starts and completes nine more Web sites and bills clients for $5,400.

b. Webworks purchases supplies worth $150 on account.

c. At the beginning of February, Webworks had nineteen keyboards costing $117 each and ten flash drives costing $20 each. Webworks uses periodic FIFO to cost its inventory.

d. On account, Webworks purchases seventy keyboards for $118 each and one hundred of the new flash drives for $22 each.

e. On February 1, Webworks borrows $3,000 from Local Area Bank. The loan plus accrued interest will be repaid at the end of two years. The interest rate is 6 percent.

f. Webworks purchases new computer equipment for use in designing Web sites. The equipment costs $5,500 and was paid for in cash.

g. Webworks pays Nancy $800 for her work during the first three weeks of February.

h. Webworks sells seventy-five keyboards for $11,250 and ninety of the new flash drives for $2,700 cash.

i. Webworks collects $5,200 in accounts receivable.

j. Webworks purchases one hundred shares of RST Company for $18 per share in cash. This is considered a trading security.

k. Webworks pays off its salaries payable from January.

l. Webworks is hired to design Web sites for a local photographer and bakery. It is paid $600 in advance.

m. Webworks pays off $11,300 of its accounts payable.

n. Webworks pays Leon a salary of $2,000.

o. Webworks completes the salon Web site and earns the $450 paid in January.

p. RST Company pays Webworks a dividend of $25.

q. Webworks pays taxes of $1,558 in cash.

Required:

A. Prepare journal entries for the above events.

B. Post the journal entries to T-accounts.

C. Prepare an unadjusted trial balance for Webworks for February.

D. Prepare adjusting entries for the following and post them to your T-accounts.

r. Webworks owes Nancy $220 for her work during the last week of February.

s. Leon’s parents let him know that Webworks owes $300 toward the electricity bill. Webworks will pay them in March.

t. Webworks determines that it has $70 worth of supplies remaining at the end of January.

u. Prepaid rent should be adjusted for February’s portion.

v. Prepaid advertising should be adjusted for February’s portion.

w. Webworks is continuing to accrue bad debts at 10 percent of accounts receivable.

x. Webworks continues to depreciate its equipment over four years and its furniture over five years, using the straight-line method. The new equipment will also be depreciated over five years using the straight-line method.

y. The license agreement should be amortized over its one-year life.

z. QRS Company is selling for $12 per share and RST is selling for $16 per share on February 28.

i. Interest should be accrued for February.

ii. Record cost of goods sold.

E. Prepare an adjusted trial balance.

F. Prepare financial statements for February.

14.1 Debt Financing

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. List and explain the advantages of debt financing.
2. List and explain the disadvantages of debt financing.
3. Explain and illustrate the use of financial leverage.
4. Define “notes” and “bonds” as used in debt financing.

Question: Businesses and other organizations need funds to finance their operations and possible expansions. Such amounts can be quite significant. A portion of this money is normally contributed by investors who choose to become owners through the purchase of shares of capital stock. Cash can also be generated internally by means of profitable operations. If net income exceeds the amount of dividends paid each period, a company has an ongoing source of financing.

However, many companies obtain a large part of the funding needed to support themselves and their growth through borrowing. If those debts will not be paid back within the following year, they are listed on the balance sheet as noncurrent liabilities. Target Corporation, for example, disclosed in its financial statements that it owed $19.9 billion in noncurrent liabilities as of January 31, 2009.

Incurring debts of such large amounts must pose some risks to an organization. Creditors expect to be repaid their entire loan balance plus **interest** *at the specified due date. What problems and potential dangers does an entity face when liabilities—especially those of significant size—are owed?*

Answer: Few things in life are free so the obvious problem with financing through debt is that it has a cost. A bank or other creditor will charge interest for the use of its money. As an example, Target Corporation reported interest expense for the year ending January 31, 2009, of approximately $900 million. The rate of interest will vary based on economic conditions and the financial health of the debtor. As should be expected, strong companies are able to borrow at a lower rate than weaker ones.

In addition, a business must be able to generate enough surplus cash to satisfy its creditors as debts come due. As indicated, Target reports noncurrent liabilities of $19.9 billion. Eventually, company officials have to find sufficient money to satisfy these obligations. Those funds might well be generated by profitable operations or contributed by investors. Or Target might simply borrow more money to pay off these debts as they mature. This

type of rollover financing is common as long as the debtor remains economically strong. Whatever the approach, the company has to manage its financial resources in such a way that all debts can be settled at their maturity date.

The most serious risk associated with debt is the possibility of bankruptcy. As has unfortunately become quite commonplace during the recent economic crisis, organizations that are not able to pay their liabilities as they come due can be forced into legal bankruptcy[1]. The end result of **bankruptcy** is frequently the liquidation of company assets although corporate reorganization and continued existence is also a possibility. The bankruptcy of Circuit City ended with all assets being sold so that the company ceased to exist. Conversely, Delta Air Lines was able to leave bankruptcy in 2007 as a business that had been completely reorganized in hopes of remaining a viable entity[2].

Given the cost and risk associated with large amounts of debt, the desire of decision makers to receive adequate and clear financial information is understandable. Few areas of financial accounting have been more discussed over the decades than the reporting of noncurrent liabilities.

Question: Debt is a costly and possibly risky method of financing a company's operations and growth. However, advantages must exist or companies would avoid incurring noncurrent liabilities wherever possible. What are the advantages to an organization of using debt to generate funding for operations and other vital activities?

Answer: One advantage of borrowing money is that interest expense is tax deductible. Therefore, a company will essentially recoup a portion of its interest expense from the government. As mentioned above, Target incurred interest expense of $900 million. This interest reduced the company's taxable income by that amount. If the assumption is made that Target has an effective income tax rate of 35 percent, the income tax total paid to the government is lowered by $315 million (35 percent of $900 million). Target pays interest of $900 million but reduces its income taxes by $315 million so that the net cost of borrowing for the period was $585 million.

Another advantage associated with debt financing is that it can be eliminated. Liabilities are not permanent. If the economic situation changes, a company can rid itself of all debt simply by making payments as balances come due. In contrast, if money is raised by issuing capital stock, the new shareholders can maintain their ownership indefinitely.

However, the biggest advantage commonly linked to debt is the benefit provided by **financial leverage**. This term refers to an organization's ability to increase reported net income by earning more money on borrowed funds than the associated cost of interest. For example, if a company borrows $1 million on a debt that charges interest of 5 percent per year, annual interest is $50,000. If the $1 million can then be used to generate a profit of $80,000, net income has gone up $30,000 ($80,000 – $50,000) using funds provided solely by creditors. The owners did not have to contribute any additional funds to increase profits by $30,000.

Over the decades, many companies have adopted a strategy of being highly leveraged, meaning that most of their funds came from debt financing. If profitable, the owners can make huge profits with little investment of their own. Unfortunately, companies that take this approach have a much greater risk of falling into bankruptcy because of the high volume of debts that have to be serviced.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093021.html

Question: Long-term financing typically comes from notes or bonds. What are notes and bonds and how do they differ from each other?

Answer: Both notes and bonds are written contracts (often referred to as indentures) that specify the payment of designated amounts of cash on stated dates. The two terms have become somewhat interchangeable over the years and clear distinctions are not likely to be found in practice. In this textbook, for convenience, the term "note" is used when a contract is negotiated directly between two parties. For example, if officials from Jones Company go to City Street Bank and borrow $1.2 million to construct a new warehouse, the contract between the parties that establishes the specifics of this loan agreement will be referred to as a note.

The term "bond" will describe a contract or group of contracts that is created by a debtor and then sold, often to a number of members of the general public. Jones Company could opt to raise the needed $1.2 million for the new warehouse by printing 1,200 $1,000 bonds that it sells to a wide array of creditors around the world.

Typically, the issuance of debt to multiple parties enables a company to raise extremely large amounts of money. As an example, according to the financial statements published by Marriott International Inc., "$350 million of aggregate principal amount of 6.375 percent Series I Senior Notes due 2017" were issued during 2007. The exact information being conveyed by this disclosure will be described in detail later in this chapter. (This transaction was followed shortly thereafter by the issuance of another $400 million of similar debt for a total of $750 million in debt financing by Marriott within that one year.)

However, if securities are to be issued to the public in this way, the legal rules and regulations of the U.S. Securities and Exchange Commission must be followed, which adds another layer of costs to the raising of funds.

Key Takeaway

Many companies have a periodic need to raise money for operations and capital improvements. Debt financing is common although it leads to an interest charge and the possibility of bankruptcy. The cost of debt is offset somewhat in that interest expense is tax deductible. Incurring liabilities also allows a company to use financial leverage to boost reported profits if the proceeds can generate more income than the cost of the related interest. Notes and bonds are debt contracts that provide the specific terms that must be followed. In this textbook, notes will indicate that loans have been negotiated between two parties whereas bonds will refer to debt instruments that are sold, often to the public.

[1]A company can seek protection from its creditors by voluntarily asking the court to allow it to enter bankruptcy. Or three creditors holding a minimum amount of debt can push a company into bankruptcy, an event known as an involuntary bankruptcy filing.

[2]Information on the bankruptcy and subsequent legal reorganization of Delta Air Lines can be found at http://money.cnn.com/2007/04/30/news/companies/delta_bankruptcy/index.htm.

Chapter 15: In Financial Statements, What Information Is Conveyed about Other Noncurrent Liabilities?

Video Clip

(click to see video)

Joe introduces Chapter 15 “In Financial Statements, What Information Is Conveyed about Other Noncurrent Liabilities?” and speaks about the course in general.

15.1 Accounting for Leases

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Recognize that a lessee can account for a lease as either an operating lease or a capital lease based on the terms of the contract.
2. Explain the reason for a lessee to prefer that a lease be reported as an operating lease rather than as a capital lease.
3. Understand the concept of off-balance sheet financing especially in connection with the reporting of leases.
4. List the four criteria to determine whether a lease contract reflects an operating lease or a capital lease.
5. Explain the term "substance over form" and how it applies to the financial reporting of a capital lease.

Question: Notes and bonds payable serve as the predominant source of reported noncurrent liabilities in the United States. Virtually all companies of any size raise significant sums of money by incurring debts of this type. However, a quick perusal of the financial statements of many well-known companies finds a broad array of other noncurrent liabilities.

- *Sears Holdings Corporation discloses capital lease obligations of approximately $650 million as of January 31, 2009.*
- *Southwest Airlines Co. reports deferred income tax liabilities of over $1.9 billion on December 31, 2008.*
- *The balance sheet for Alcoa Inc. at that same December 31, 2008, date lists a $2.73 billion liability (over 10 percent of the company's total) labeled as "accrued postretirement benefits."*

These other noncurrent liability figures represent large amounts of debts beyond traditional notes and bonds. Some understanding of such balances is necessary in order to comprehend the information being conveyed in a set of financial statements. The reporting of liabilities such as these is explored in great depth in upper-level financial accounting courses. However, a basic level of knowledge is essential for every potential decision maker, not just those few who chose to major in accounting in college.

In this chapter, leases and related liabilities will be explored first. To illustrate, assume that the Abilene Company needs an airplane to use in its daily operations. Rather than buy this asset, an airplane is leased from a business that owns a variety of aircraft. Perhaps Abilene prefers to push the payments off into the future as far as possible. The lease is for seven years at a cost of $100,000 per year. On the day that this lease is signed, should Abilene report a liability and, if so, is the amount the first $100,000 installment, the $700,000 total of all payments, or some other figure?
How is a liability reported in connection with the lease of an asset?

Answer: For the Abilene Company, the liability balance to be reported here cannot be determined based purely on the information that is provided. When a **lessee** (the party that will make use of the asset) signs an agreement such as this, the lease transaction can be recorded in one of two ways based on the terms of the contract.

- Abilene might be obtaining the use of this airplane through an operating lease, a rental arrangement. If so, the liability to be recognized when the contract is signed is $100,000, only the amount due immediately. Upon payment, reported debt is reduced to zero despite the requirement that six more installments will have to be paid.
- The transaction could also have met the criteria for classification as a capital lease, the equivalent of buying the airplane. In that case, the initial liability recognized by Abilene is the present value of the total $700,000 in cash payments.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092984.html

Question: This answer raises a number of immediate questions about lease accounting. Probably the first of these relates to the practical goal of officials who want to produce financial statements that make their company look as healthy and prosperous as possible. A lease agreement might be reported as an **operating lease** *so that only the initial payment is recorded as a liability or as a* **capital lease** *whereby the present value of all payments (a much larger number) is shown as the liability. Officials for the lessee must surely prefer to classify all leases as operating leases if that is possible to reduce the reported debt total. In financial reporting for a lessee, is there not a bias to report operating leases rather than capital leases? This desire has to impact the method by which transactions are constructed.*

Answer: The answer to this question is obviously "Yes." If a choice exists between reporting a larger liability (capital lease) or a smaller one (operating lease), officials for the lessee are inclined to take whatever measures are necessary to classify each contract as an operating lease. Financial accounting should report events and not influence them. However, at times, authoritative reporting standards impact the method by which events are structured.

Although Abilene Company is bound by the agreement to pay a much larger amount, only the $100,000 balance due at the time the contract is signed is reported as a liability if usage of the airplane is obtained through an operating lease. The term "**off-balance sheet financing**" is commonly used when a company is obligated for an amount of money that is larger than the reported debt. Operating leases are one of the primary examples of "off-balance sheet financing."

For example, as mentioned at the start of this chapter, Sears Holdings Corporation reports a noncurrent liability of about $650 million in connection with its capital leases. As the notes to those financial statements explain,

the company has also signed many other operating leases (for the use of stores, office facilities, warehouses, computers and transportation equipment) that will actually require payment of over $6 billion in the next few years. The debt for that additional $6 billion is "off the balance sheet;" it is not included in the liability section of the company's balance sheet. In accounting for an operating lease, the reported liability balance does not reflect the cash obligation, just the current amount that is due.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092985.html

Question: For a lessee, a radical reporting difference exists between operating leases and capital leases. Company officials prefer operating leases so that the amount of reported liabilities is lower. What is the distinction between an operating lease and a capital lease?

Answer: In form, all lease agreements are rental arrangements. One party (the lessor) owns legal title to property while the other (the lessee) rents the use of that property for a specified period of time. However, in substance, a lease agreement may go beyond a pure rental agreement. Financial accounting has long held that a fairly presented portrait of an entity's financial operations and economic health can only be achieved by looking past the form of a transaction in order to report the actual substance of what is taking place. "Substance over form" is a mantra often heard in financial accounting.

Over thirty years ago, FASB issued its *Statement 13*, "Accounting for Leases," to provide authoritative guidance for the financial reporting of leases. In paragraph 60 of that pronouncement, FASB states that "a lease that transfers substantially all of the benefits and risks incident to the ownership of property should be accounted for as the acquisition of an asset and the incurrence of an obligation by the lessee." In substance, the lessee can obtain such a significant stake in leased property that the transaction more resembles a purchase than it does a rental. When the transaction is more like a purchase, it is accounted for as a capital lease. When the transaction is more like a rental, it is accounted for as an operating lease.

- *Capital lease*. Lessee gains substantially all the benefits and risks of ownership. The transaction is reported as a purchase although the legal form is still that of a lease arrangement.
- *Operating lease*. Lessee does not obtain substantially all the benefits and risks of ownership. The transaction is reported as a rental arrangement.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093029.html

Question: A capital lease is accounted for as a purchase because it so closely resembles the acquisition of the

asset. An operating lease is less like a purchase and more like a rent. The lessee normally prefers to report such transactions as operating leases to reduce the amount of liabilities shown on its balance sheet. How does an accountant determine whether a contract qualifies as a capital lease or an operating lease?

Answer: In establishing reporting guidelines in this area, FASB created four specific criteria to serve as the line of demarcation between the two types of leases. Such rules set a standard that all companies must follow. If any one of these criteria is met, the lease is automatically recorded by the lessee as a capital lease. Both the asset and liability are reported as if an actual purchase took place. Not surprisingly, accountants study these criteria carefully to determine how the rules can be avoided so that each new contract is viewed as an operating lease.

Note in each of these criteria the rationale for classifying the transaction as a capital lease.

1. The lease contract specifies that title to the property will be conveyed to the lessee by the end of the lease term. If legal ownership is to be transferred from **lessor** to lessee, the entire series of payments is simply a method devised to purchase the asset. In substance, the agreement was never intended to be a rental. From the beginning, the property was being acquired.
2. The lease contract allows the lessee to buy the property at a specified time at an amount sufficiently below its expected fair value so that purchase is reasonably assured. The availability of this bargain purchase option indicates, once again, that the true intention of the contract is the conveyance of ownership. The transaction is the equivalent of a purchase if the option price is so low that purchase by the lessee can be anticipated.
3. The lease contract is for a term that is equal to 75 percent or more of the estimated life of the property. This criterion is different from the first two where the transaction was just a disguised purchased. Here, the lessee will never gain ownership. However, the lease is for such an extensive portion of the asset's life that the lessee obtains a vast majority of its utility. Although the 75 percent standard is an arbitrary benchmark, no doubt can exist that the lessee will be the primary beneficiary of the value of the property.
4. The fourth criterion is too complicated to cover in an introductory textbook. The general idea is that the lessee is paying approximately the same amount as would have been charged just to buy the asset. Paying the equivalent of the purchase price (or close to it) indicates that no real difference exists between the nature of the lease transaction and an acquisition.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093008.html

Key Takeaway

A lessee must account for a lease contract as either an operating lease or a capital lease depending on the specific terms of the agreement. Officials working for the lessee are likely to prefer designation as an operating lease because a smaller liability will be reported. Operating leases are common examples of off-balance sheet financing because a significant portion of the contractual payments are not reported as liabilities on the balance sheet. In contrast, for a capital lease, the present value of all future cash flows must be included as a liability. To differentiate operating leases from capital leases, four criteria have been established by FASB. If any one of these criteria is met, the lessee accounts for the transaction as a capital lease. Thus, although a lease in form, the contract is viewed as a purchase in substance and reported in that manner.

15.2 Operating Leases versus Capital Leases

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Account for an operating lease, realizing that the only liability to be reported are amounts that are currently due.
2. Understand that the only asset reported in connection with an operating lease is prepaid rent if payments are made in advance.
3. Record the initial entry for a capital lease with both the asset and the liability calculated at the present value of the future cash flows.
4. Explain the interest rate to be used by the lessee in determining the present value of a capital lease and the amount of interest expense to be recognized each period.
5. Determine and recognize the depreciation of a leased asset.

Question: The Abilene Company has agreed to pay $100,000 per year for seven years to lease an airplane. Assume that legal title will not be exchanged and no purchase option is mentioned in the contract. Further assume that the life of the plane is judged to be ten years and that the amount to be paid does not approximate the fair value of the item. The contract is signed on December 31, Year One, with the first annual payment made immediately. This agreement does not appear to meet any of the four criteria for a capital lease. What financial accounting is appropriate for an operating lease?

Answer: None of the four criteria for a capital lease is being met in this transaction:

1. Legal ownership is not conveyed to the lessee.
2. No bargain purchase option is included in the contract.
3. The life of the lease is less than 75 percent of the life of asset (7 years/10 years or 70 percent).
4. Payments do not approximate the acquisition value of the asset.

Thus, this lease is recorded as an operating lease. The first annual payment was made immediately to cover the subsequent year.

Figure 15.1 December 31, Year One—Payment of First Installment of Operating Lease

Because the first payment has been made, no liability is reported on Abilene's balance sheet although the contract specifies that an additional $600,000 in payments will be required over the subsequent six years. In addition, the airplane itself is not shown as an asset by the lessee because this operating lease is viewed as the equivalent of a rent and not a purchase.

During Year Two, the future value provided by the first prepayment gradually becomes a past value because of the passage of time. The asset balance is reclassified as an expense. At the end of that period, the second payment will also be made.

Figure 15.2 December 31, Year Two—Adjustment to Record Rent Expense for Year Two

Figure 15.3 December 31, Year Two—Payment of Second Installment of Operating Lease

Question: One slight change can move this contract from an operating lease to a capital lease. Assume all the information remains the same in the above example except that the airplane has an expected life of only nine years rather than ten. With that alteration, the life of the lease is 77.8 percent of the life of the asset (seven years out of nine years). That is 75 percent or more of the life of the asset. Because one of the criteria is now met, this contract must be viewed as a capital lease. The change in that one estimation creates a major impact on the reporting process. How is a capital lease reported by the lessee?

Answer: As a capital lease, the transaction is reported in the same manner as a purchase. Abilene has agreed to pay $100,000 per year for seven years but no part of this amount is specifically identified as interest. According to U.S. GAAP, if a reasonable rate of interest is not explicitly paid each period, a present value computation is required to divide the contractual payments between principal (the amount paid for the airplane) and interest (the amount paid to extend payment over this seven-year period). This handling is appropriate for an actual purchase when payments are made over time but also for a capital lease.

Before the lessee starts computing the present value of the future cash flows, one issue must be resolved: the appropriate rate of interest to be applied. In the previous chapter, a negotiated rate was established by the buyer and seller of a bond prior to its issuance. Normally, no such bargained rate exists in connection with a lease. Therefore, the lessee uses its own incremental borrowing rate. That is the interest rate the lessee would be forced to pay if this same amount of money was borrowed from a bank or other lending institution[1]. Assume here that the incremental borrowing rate for Abilene is 10 percent per year. If the company had signed a loan to buy this airplane instead of lease it, the annual interest rate demanded by the lender is assumed to be 10 percent.

Abilene will pay $100,000 annually over these seven years. Because the first payment is made immediately, these payments form an annuity due. As always, the present value calculation computes the interest at the appropriate rate and then removes it to leave the principal: the amount paid for the airplane. Once again, present value can be found by table, by formula, or by Excel spreadsheet[2].

Present Value of an Annuity Due of $1

http://www.principlesofaccounting.com/ART/fv.pv.tables/pvforannuitydue.htm

Present value of an annuity due of $1 per year for seven years at a 10 percent annual interest rate is $5.35526. The present value of seven payments of $100,000 is $535,526.

present value = $100,000 × 5.35526
present value = $535,526

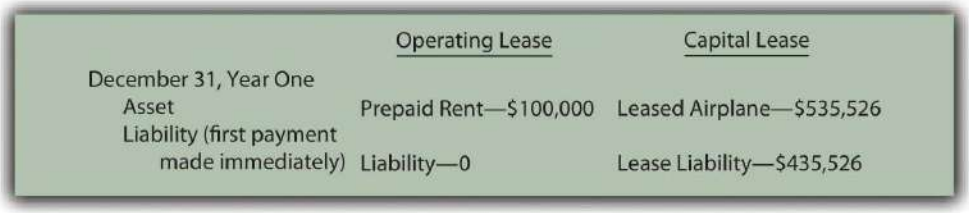
Once present value has been determined, the recording of the capital lease can proceed very much like a purchase made by signing a long-term liability.

Figure 15.4 December 31, Year One—Capital Lease Recorded at Present Value

Figure 15.5 December 31, Year One—Initial Payment on Capital Lease

A comparison at this point between the reporting of an operating lease and a capital lease is striking. The differences are not inconsequential. For the lessee, good reasons exist for seeking an operating lease rather than a capital lease.

Figure 15.6 Comparison of Reported Amounts for Operating Lease and for Capital Lease



Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092986.html

Question: In a capital lease, the property is not bought but is accounted for as if it had been purchased. Abilene records both the leased airplane and the liability at the present value of the required cash payments. What reporting takes place subsequent to the initial recording of a capital lease transaction?

Answer: As with any purchase of an asset having a finite life where payments extend into the future, the cost of the asset is depreciated and interest is recognized in connection with the liability. This process remains the same whether the asset is bought or obtained by a capital lease.

Depreciation. The airplane will be used by Abilene for the seven-year life of the lease. The recorded cost of the asset is depreciated over this period to match the expense recognition with the revenue that the airplane helps generate. If the straight-line method is applied, annual depreciation is $76,504 (rounded) or $535,526/7 years.

Interest. The principal of the lease liability during Year Two is $435,526. That is the initial $535,526 present value less the first payment of $100,000. The annual interest rate used in determining the present value was 10 percent so interest expense of $43,553 (rounded) is recognized for this period of time—the principal of $435,526 times this 10 percent annual rate. As in Chapter 14 "In a Set of Financial Statements, What Information Is Conveyed about Noncurrent Liabilities Such as Bonds?", the effective rate method is applied here. Both the asset and liability are reported as if the asset had been bought for these payments. That is the fundamental idea of a capital lease.

Figure 15.7 December 31, Year Two—Depreciation of Airplane Obtained in Capital Lease

Depreciation Expense	76,504	
Accumulated Depreciation		76,504

Figure 15.8 December 31, Year Two—Interest on Lease Liability from Capital Lease

Interest Expense	43,553	
Lease Liability		43,553

Figure 15.9 December 31, Year Two—Second Payment on Capital Lease

Lease Liability	100,000	
Cash		100,000

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093031.html

Talking with an Independent Auditor about International Financial Reporting Standards (Continued)

Following is a continuation of our interview with Robert A. Vallejo, partner with the accounting firm PricewaterhouseCoopers.

Question: In U.S. GAAP, if a lease arrangement meets any one of four criteria, the transaction is reported as a capital lease. Companies often design transactions to either avoid or meet these criteria based on the desired method of accounting. Do IFRS requirements utilize the same set of criteria to determine whether a capital lease or an operating lease has been created?

Rob Vallejo: A lease contact may well be classified differently under IFRS than under U.S. GAAP. This is an example of where U.S. GAAP has rules and IFRS has principles. Under U.S. GAAP, guidance is very specific based on the four rigid criteria established by FASB. However, under IFRS, the guidance focuses on the substance of the transaction and there are no quantitative breakpoints or bright lines to apply. For example, there is no definitive rule such as the "75 percent of the asset's life" criterion found in U.S. GAAP. IFRS simply asks the question: have substantially all the risks and rewards of ownership been transferred? Therefore, this difference could be significant to those organizations that have designed their leases to fit into a certain category under U.S. GAAP. More of these contacts will probably be accounted for as capital leases (which are referred to as finance leases in IFRS). This issue could be resolved in the near term, as FASB and IASB are conducting a joint project to modify their respective standards by 2011.

Key Takeaway

Operating leases record amounts as they come due and are paid. Therefore, the only reported asset is a prepaid rent and the liability is the current amount due. In contrast, for a capital lease, the present value of the future cash payments is determined using the incremental borrowing rate of the lessee. That amount is recorded as both the leased asset and the lease liability. The asset is then depreciated over the time that the lessee will make use of it while interest expense is recorded (along with periodic payments) in connection with the liability.

[1]As explained in upper-level accounting textbooks and courses, under certain circumstances, the lessee might use the implicit interest rate built into the lease contract by the lessor.

[2]The mathematical formula to determine the present value of an annuity due of $1 per period is $[(1 - 1/[1 + i]^n)/i] \times (1 + i)$, where i is the appropriate interest rate and n is the number of payment periods. On an Excel spreadsheet, the present value of a $1 per period annuity due for seven periods at an assumed annual interest rate of 10 percent is computed by typing the following data into a cell: =PV(.10,7,1,,1).

15.3 Recognition of Deferred Income Taxes

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Understand that the recognition of revenues and expenses under U.S. GAAP differs at many critical points from the rules established by the Internal Revenue Code.
2. Explain the desire by corporate officials to defer the payment of income taxes.
3. Determine the timing for the reporting of a deferred income tax liability and explain the connection to the matching principle.
4. Calculate taxable income when the installment sales method is used as well as the related deferred income tax liability.

Question: At the beginning of this chapter, mention was made that Southwest Airlines reported deferred income taxes at the end of 2008 as a noncurrent liability of $1.9 billion. Such an account balance is not unusual. The Kroger Co. listed a similar $384 million debt on its January 31, 2009, balance sheet. At approximately the same time, Ford Motor Company reported a $614 million

deferred tax liability

for its automotive business and another $3.28 billion for its financial services division. What is the meaning of these accounts?

How is a deferred income tax liability created?

Answer: The reporting of deferred income tax liabilities is, indeed, quite prevalent. One survey in 2007 found that approximately 70 percent of businesses included a deferred tax balance within their noncurrent liabilities (Iofe & Calderisi, 2008). Decision makers need to have a basic understanding of any account that is so commonly encountered in a set of financial statements.

In the discussion of LIFO presented in Chapter 9 "Why Does a Company Need a Cost Flow Assumption in Reporting Inventory?", the point was made that financial accounting principles and income tax rules are not identical. In the United States, financial information is presented based on the requirements of U.S. GAAP while income tax figures are determined according to the Internal Revenue Code. At many places, these two sets of guidelines converge. For example, if a grocery store sells a can of tuna fish for $6 in cash, the revenue is $6 on both the reported financial statements and the income tax return. However, at a number of critical junctures, the recognized amounts can be quite different.

Where legal, companies frequently exploit these differences for their own benefit by delaying tax payments. The deferral of income taxes is usually considered a wise business strategy because it allows the company to use its

cash for a longer period of time and, hence, generate additional revenues. If an entity makes a 10 percent return on its assets and manages to defer a tax payment of $100 million for one year, the additional profit to be earned is $10 million ($100 million × 10 percent).

Businesses commonly attempt to reduce current taxable income by moving it into the future. In general, this is the likely method used by Southwest, Kroger, and Ford to create their deferred tax liabilities.

- Revenue or a gain might be recognized this year for financial reporting purposes but put off until an upcoming time period for tax purposes. The payment of tax on this income has been pushed to a future year.
- An expense is recognized immediately for tax purposes although it can only be deducted in later years according to financial accounting rules.

In both of these cases, taxable income is reduced in the current period (revenue is moved out or expense is moved in) but increased at a later time (revenue is moved in or expense is moved out). Because a larger tax will have to be paid in the subsequent period, a deferred income tax liability is reported.

Deferred income tax liabilities are easiest to understand conceptually by looking at revenues and gains. Assume that a business reports revenue of $100 on its Year One income statement. Because of certain tax rules and regulations, assume that this amount will not be subject to income taxation until Year Six. The $100 is referred to as a **temporary tax difference**. It is reported for both financial accounting and tax purposes but in two different time periods.

If the effective tax rate is 40 percent, the business records a $40 ($100 × 40 percent) deferred income tax liability on its December 31, Year One, balance sheet. This amount will be paid to the government but not until Year Six when the revenue becomes taxable. The revenue is recognized now according to U.S. GAAP but in a later year for income tax return purposes. Net income is higher in the current year than taxable income, but taxable income will be higher by $100 in the future. Payment of the $40 in income taxes on that $100 difference is delayed until Year Six.

Simply put, a deferred income tax liability[1] is created when an event occurs now that will lead to a higher amount of income tax payment in the future.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093032.html

Question: Deferring the payment of an income tax liability does not save a company any money. This process merely delays recognition for tax purposes until a later period. Payment is put off for one or more years. If no tax money is saved, why do companies seek to create deferred income tax liabilities? Why not just pay the income tax now and get it over with?

Answer: As discussed above, delaying the mailing of an income tax check to the government allows a company to make use of its money for a longer period of time. When the cash is paid, it is gone and provides no further benefit to the company. As long as the money is still held, it can be used by management to buy inventory, acquire securities, pay for advertising, invest in research and development activities, and the like. Thus, a common business strategy is to avoid paying taxes for as long as legally possible so that more income can be generated from these funds before they are turned over to the government.

Question: Assume that the Hill Company buys an asset (land, for example) for $150,000. Later, this asset is sold for $250,000 in Year One. The earning process is substantially complete at that point so Hill reports a gain on its Year One income statement of $100,000 ($250,000 less $150,000). Because of the terms of the sales contract, the money will not be collected from the buyer until Year Four (20 percent) and Year Five (80 percent). The buyer is financially strong and expected to pay at the required times. Hill's effective tax rate for this transaction is 30 percent.

Officials for Hill are pleased to recognize the $100,000 gain on this sale in Year One because it makes the company looks better. However, they prefer to wait as long as possible to pay the income tax especially since no cash has yet been collected from the buyer. How can the recognition of income be deferred for tax purposes so that a deferred income tax liability is reported?

Answer: According to U.S. GAAP, this $100,000 gain is recognized in Year One based on accrual accounting. The earning process is substantially complete and the amount to be collected can be reasonably estimated. However, if certain conditions are met, income tax laws permit taxpayers to report such gains using the installment sales method[2]. In simple terms, the installment sales method allows a seller to delay the reporting of a gain until cash is collected. The gain is recognized proportionally based on the amount of cash received. If 20 percent is collected in Year Four, then 20 percent of the gain becomes taxable in that year.

In this illustration, no cash is received in Year One so no taxable income is reported.

Figure 15.10 Year One—Comparison of Financial Reporting and Tax Reporting

Year One	Financial Accounting	Income Tax Return
Gain on Sale of Asset	$100,000 (accrual accounting)	0 (installment sales method)

The eventual tax to be paid on the gain will be $30,000 ($100,000 × 30 percent). How is this $30,000 reported in Year One if payment is not required until Years Four and Five?

First, because of the matching principle, an expense of $30,000 is recorded in Year One. As can be seen above, the $100,000 gain is reported on the income statement in that year. Any related expense should be recognized in the same period. That is the basic premise of the matching principle.

Second, the $100,000 gain creates a temporary difference. The amount will become taxable when the cash is

collected. At that time, a tax payment of $30,000 is required. Accountants have long debated whether this liability is created when the income is earned or when the payment is to be made. In legal terms, the company does not owe any money to the government until the Year Four and Year Five tax returns are filed. However, U.S. GAAP states that recognition of the gain in Year One creates the need to report the liability. Thus, a deferred income tax liability is also recorded at that time.

Consequently, the following adjusting entry is included at the end of Year One so that both the expense and the liability are properly reported.

Figure 15.11 December 31, Year One—Recognition of Deferred Income Tax on Gain

In Year Four, the customer is expected to pay the first 20 percent of the $250,000 sales price ($50,000). If that payment is made at that time, 20 percent of the gain becomes taxable and the related liability comes due. Because $20,000 of the gain (20 percent of the total) is now reported within taxable income, a $6,000 payment ($20,000 gain × 30 percent tax rate) is made to the government, which reduces the deferred income tax liability.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092988.html

Key Takeaway

U.S. GAAP and the Internal Revenue Code are created by separate groups with different goals in mind. Consequently, many differences exist as to amounts and timing of income recognition. Business officials like to use these differences to postpone the payment of income taxes so that the money can remain in use and generate additional profits. Although payment is not made immediately, the matching principle requires the expense to be reported in the same time period as the related revenue. In recognizing this expense, a deferred income tax liability is also created that remains in the financial records until payment is made. One of the most common methods for deferring income tax payments is application of the installment sales method. According to that method, recognition of the profit on a sale is delayed until cash is collected. In the interim, a deferred tax liability is reported to alert decision makers to the eventual payment that will be required.

[1]Many companies also report deferred income tax assets that arise because of other differences in U.S. GAAP and the Internal Revenue Code. For example, Southwest Airlines included a deferred income tax asset of $365 million on its December 31, 2008, balance sheet. Accounting for such assets is especially complex and will not be covered in this textbook. Some portion of this asset balance, although certainly not all, is likely to be the equivalent of a prepaid income tax where the company was required to make payments by the tax laws in advance of recognition according to U.S. GAAP.

[2]The installment sales method can also be used for financial reporting purposes but only under very limited circumstances.

References

Iofe, Y., senior editor, and Matthew C. Calderisi, CPA, managing editor, *Accounting Trends & Techniques*, 62nd edition (New York: American Institute of Certified Public Accountants, 2008), 266.

15.4 Reporting Postretirement Benefits

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Define the term “postretirement benefits.”
2. Explain the accounting problems associated with the recognition of accrued postretirement benefits.
3. List the steps that are followed to determine a company’s reported obligation for postretirement benefits.
4. Identify the role of the actuary in accounting for postretirement benefits.
5. Calculate the debt-to-equity ratio and explain its meaning.
6. Calculate the times interest earned ratio and explain its meaning.

Question: According to the information at the beginning of this chapter, Alcoa reported a $2.73 billion liability at the end of 2008 for accrued postretirement benefits. What constitutes a postretirement benefit?

Answer: In a note to the Alcoa financial statements, the company explains part of this liability amount as follows:

“Alcoa maintains health care and life insurance benefit plans covering eligible U.S. retired employees and certain retirees from foreign locations. Generally, the medical plans pay a percentage of medical expenses, reduced by deductibles and other coverages. These plans are generally unfunded, except for certain benefits funded through a trust. Life benefits are generally provided by insurance contracts. Alcoa retains the right, subject to existing agreements, to change or eliminate these benefits.”

Postretirement benefits cover a broad array of promises that companies make to their employees to boost morale and keep them from seeking other jobs. Alcoa is providing two of the most common: health care insurance and life insurance. Based on stipulations that may be required for eligibility, Alcoa helps employees by paying a portion of their insurance cost even after they have retired. This benefit is apparently earned by working for the company. After a person retires, Alcoa continues to provide these payments as a reward for years of employee service.

Question: Assume that one of the employees for the Michigan Company is currently thirty-four years old and is entitled to retirement benefits starting at the age of sixty-five. Michigan has promised to continue paying health care and life insurance premiums for all retirees as long as they live[1]*.For this employee, no postretirement benefits will be paid for thirty-one years (65 less 34) but then an unknown payment amount will continue for an unknown period of time. In Chapter 2 “What Should Decision-makers Know So That Good Decisions Can Be Made about an Organization?”, the challenge presented to accountants as a result of future uncertainty was*

discussed. Probably no better example can be found than postretirement benefits. For example, if this employee lives to be ninety-four, these insurance payments will continue until sixty years into the future.

The employee is helping the company generate revenues currently so that, once again, the related expense should be recognized now according to the matching principle. Although this obligation might extend for decades, both the expense and related liability are recorded when the person is actually working for the company and earning these benefits.

How is the amount of this obligation possibly determined? An employee might retire at sixty-five and then die at sixty-six or live to be ninety-nine. Plus, estimating the cost of insurance (especially medical insurance) over several decades into the future seems to be a virtually impossible challenge. The skyrocketing cost of health care is difficult to anticipate months in advance, let alone decades. The dollar amount of the company's obligation for these future costs appears to be a nebulous figure at best. In this textbook, previous liabilities have been contractual or at least subject to a reasonable estimation prior to recognition. How is the liability calculated that will be reported by a company for the postretirement benefits promised to its employees?

Answer: As shown by the Alcoa example, postretirement benefits are estimated and reported according to U.S. GAAP while employees work. Because of the length of time involved and the large number of variables (some of which, such as future health care costs, are quite volatile), a precise determination of this liability is impossible. In fact, it may be the most uncertain number found on any set of financial statements. FASB apparently believes that reporting a dollar amount for postretirement benefits, despite its inexactness, is more helpful than omitting the expense and liability entirely. Decision makers need to understand that these reported balances are no more than approximations.

The actual computation and reporting of postretirement benefits is more complicated than can be covered adequately in an introductory financial accounting textbook. An overview of the basic steps, though, is useful in helping decision makers understand the information that is provided.

To determine the liability to be reported for postretirement benefits that are earned now but only paid after retirement, the Michigan Company takes two primary steps. First, an **actuary** calculates an estimation of the cash amounts that will eventually have to be paid as a result of the terms promised to employees. "An actuary is a business professional who analyzes the financial consequences of risk. Actuaries use mathematics, statistics, and financial theory to study uncertain future events, especially those of concern to insurance and pension programs[2]." In simpler terms, an actuary is an expert who mathematically computes the likelihood of future events.

For **postretirement benefits**, the actuary has to make a number of estimations such as the average length of the employees' lives and the approximate future costs of health care and life insurance (and any other benefits provided to retirees) based on all available data. For example, an actuary's calculations might indicate that these costs will average $10,000 per year for the twenty years that an employee is expected to live following retirement.

The future payments are estimated by an actuary but they must often be projected decades into the future. Thus, as the second step in this process, the present value of these amounts is calculated to derive the figure to be reported currently on the balance sheet. Once again, as in previous chapters, interest for this period of time is determined

mathematically and removed to leave just the principal of the obligation as of the balance sheet date. That is the amount reported within noncurrent liabilities.

Determining Accrued Postretirement Benefits
Step One: Estimate Future Payments
Step Two: Calculate Present Value of Estimated Future Payments

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093033.html

Question: Alcoa is recognizing an accrued postretirement benefit liability of $2.73 billion. This number is an estimation of the total amount that the company will have to pay starting when each employee retires, a figure that is then subjected to a present value computation. Except for the inherent level of uncertainty, the accounting process seems reasonable. At one time, companies were not required to recognize this obligation. The liability was ignored and costs were simply expensed as paid. Only after advanced computer technology and sophisticated mathematical formulas became available was the reporting of this liability mandated by FASB. What is the impact of reporting postretirement benefits if the number is only an approximation?

Answer: Organizations typically prefer not to report data that appear to weaken the portrait of their economic health and vitality. However, better decisions are made by all parties when more information is readily available. Transparency is a primary goal of financial accounting. Arguments can be made that some part of the problems that automobile and some other businesses currently face are the result of promises that were made over the past few decades where the eventual costs were not properly understood.

As the result of the evolution of U.S. GAAP, decision makers (both inside and outside the company) can now better see the costs associated with postretirement benefits. Not surprisingly, once disclosed, some companies opted to cut back on the amounts promised to retirees. The note quoted above for Alcoa goes on further to say, "All U.S. salaried and certain hourly employees hired after January 1, 2002, will **not** have postretirement health care benefits. All U.S. salaried and certain hourly employees that retire on or after April 1, 2008, will **not** have postretirement life insurance benefits" (emphasis added).

For the employees directly impacted, these decisions may have been quite alarming. However, by forcing the company to recognize this liability, U.S. GAAP has helped draw attention to the costs of making such promises.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092990.html

Question: In previous chapters, various vital signs have been examined—numbers, ratios, and the like that help decision makers evaluate an entity's financial condition and future prospects. In connection with liabilities, do any specific vital signs exist that are frequently relied on to help assess the economic health of a business or other organization?

Answer: One vital sign that is often studied by decision makers is the **debt-to-equity ratio**. This figure is simply the total liabilities reported by a company divided by total stockholders' equity. The resulting number indicates whether the company gets most of its assets from borrowing and other debt or from its operations and owners. A high debt-to-equity ratio indicates that a company is highly leveraged. As discussed in Chapter 14 "In a Set of Financial Statements, What Information Is Conveyed about Noncurrent Liabilities Such as Bonds?", that raises the level of risk but also increases the possible profits earned by stockholders. Relying on debt financing makes a company more vulnerable to bankruptcy and other financial problems but also provides owners with the chance for higher financial rewards.

Recent debt-to-equity ratios shown below for several prominent companies show a wide range of results. No single financing strategy is evident here. The debt-to-equity ratio is not just indicative of a company's selected policy. In some industries, debt levels tend to be higher than in others. Also, individual responses to the recent economic recession might have impacted some companies more than others.

Figure 15.12 Recent Debt-to-Equity Ratios for Several Prominent Companies

Company	Debt-to-Equity Ratio
Kellogg Company	6.56 to 1.00 (as of January 3, 2009)
J. C. Penney Company	1.89 to 1.00 (as of January 31, 2009)
Monsanto Company	0.87 to 1.00 (as of August 31, 2008)
The Walt Disney Company	0.93 to 1.00 (as of September 27, 2008)

Another method to evaluate the potential problem posed by debts is to compute the **times interest earned (TIE)** ratio. Normally, debt only becomes a risk if interest cannot be paid when due. This calculation helps measure how easily a company has been able to meet its interest obligations through current operations.

Times interest earned begins with the company's net income before both interest expense and income taxes are removed (a number commonly referred to as EBIT). Interest expense for the period is then divided into this income figure. For example, if EBIT is $500,000 and interest expense is $100,000, the reporting company earned enough during the year to cover the required interest obligations five times.

Figure 15.13 Recent Times Interest Earned for Several Prominent Companies

Company	Times Interest Earned
Kellogg Company	6.3 times (year ended January 3, 2009)
J. C. Penney Company	5.1 times (year ended January 31, 2009)
Monsanto Company	27.6 times (year ended August 31, 2008)
The Walt Disney Company	14.5 times (year ended September 27, 2008)

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092991.html

Key Takeaway

Businesses and other organizations often promise benefits (such as medical insurance and life insurance coverage) to eligible employees for the years after they reach retirement age. Determining the related liability poses a significant challenge for accountants because the eventual payment amounts are so uncertain. An actuary uses historical data, computer programs, and statistical models to estimate these amounts. The present value of these projected cash payments is then calculated and recognized as a noncurrent liability. The size of this debt can be quite large but the numbers are no more than approximations. Decision makers often analyze the level of a company's debt by computing the debt-to-equity ratio and the times interest earned ratio. Both of these calculations help decision makers evaluate the risk and possible advantage of the current degree of debt financing.

Talking with a Real Investing Pro (Continued)

Following is a continuation of our interview with Kevin G. Burns.

Question: Lease arrangements are quite common in today's business environment. For a capital lease, the present value of the future payments is reported by the lessee as a liability. In contrast, for an operating lease, only the amount currently due is included on the balance sheet as a liability. The reporting of such off-balance sheet financing has been criticized because businesses often go out of their way to create operating leases to minimize the total shown for their debts. However, information about these operating leases must be clearly disclosed in the notes to the financial statements. Are you concerned when you see a company with a lot of off-balance sheet financing? Would you prefer a system where companies had to report more of their debts from leasing arrangements? Do you believe off-balance sheet financing is a problem for the users of financial accounting information?

Kevin Burns: I hate off balance sheet financing. It is trickery in my opinion. As usual, I prefer full or even too much disclosure. A lease is a liability. It should be categorized as such. It is really quite simple—show the liability. Having information in the notes helps but liabilities should be reported on the balance sheet for all to see easily. Anything that reduces transparency is bad for the accounting industry and the people relying on reported financial information.

Video Clip

" href="http://app.wistia.com/embed/medias/44f9b740fe" class="replaced-iframe">(click to see video)

Unnamed Author talks about the five most important points in Chapter 15 “In Financial Statements, What Information Is Conveyed about Other Noncurrent Liabilities?”.

[1]Health care and life insurance benefits paid by an employer while an employee is still working do not pose an accounting issue. The amounts are known and can be expensed as incurred. These expenses are matched with the revenues being earned at the current time.

[2]http://www.math.purdue.edu/academic/actuary/what.php?p=what.

15.5 End-of-Chapter Exercises

Questions

1. Define “lease.”
2. Who are the parties involved in a lease?
3. Name the two types of leases from a lessee’s perspective.
4. Define “off-balance sheet financing.”
5. Define “capital lease.”
6. Define “operating lease.”
7. Briefly list the four criteria that require capital lease reporting by a lessee.
8. How many of the four criteria must be met to require capital lease accounting?
9. Define “incremental borrowing rate.”
10. Why do deferred tax liabilities exist?
11. Define “deferred tax liability.”
12. Define “postretirement benefits.”
13. Give two examples of postretirement benefits.
14. How is a company’s debt-to-equity ratio calculated?
15. How is a company’s times interest earned determined?

True or False

1. ____ A lessee recording a lease as a capital lease will record depreciation on the leased property.
2. ____ Because taxable income is lower in the current period, a deferral of income recognition is called a deferred tax asset.
3. ____ Postretirement benefits are some of the largest estimates on financial statements.
4. ____ A lease must meet at least two of the criteria set down in Statement of Financial Accounting Standard 13 to be a capital lease.
5. ____ Postretirement benefits are not expensed until they are paid.
6. ____ Lessees usually prefer to record leases as operating leases rather than capital leases.
7. ____ The goals of financial reporting and income tax reporting are not the same.
8. ____ The only postretirement benefit typically paid by companies is pensions.
9. ____ Depreciation and interest are recorded by a lessee under a capital lease, but not an operating lease.
10. ____ Actuaries are business professionals who deal with risk.

Multiple Choice

1. Which of the following is **not** a criterion that triggers capital lease recording?

    1. Lease covers at least 75 percent of an asset's life
    2. Lease contains a bargain purchase option
    3. Payments cover at least 50 percent of the asset's fair value
    4. Asset transfers to lessee at end of lease

2. Charlotte Company leases a piece of equipment on February 1. The lease covers two years and the life of the equipment is four years. There is no bargain purchase option, the equipment does not transfer to Charlotte at the end of the lease, and the payments do not approximate the fair value of the equipment. The payments are $4,000 due each February 1, starting with the current one. Charlotte's incremental borrow rate is 5 percent. What journal entry(ies) should Charlotte make on February 1?

    1. Figure 15.14

    2. Figure 15.15

    3. Figure 15.16

    4. Figure 15.17

3. Sellers Corporation has assets of $450,000 and liabilities of $200,000. What is Sellers' debt-to-equity ratio?

    1. 0.80 to 1.00
    2. 1.25 to 1.00
    3. 2.25 to 1.00

4. 0.44 to 1.00

4. Which of the following is **not** a true statement about postretirement benefits?

    1. A company's liability for postretirement benefits is difficult to estimate.
    2. An expense for an employee's future benefits should be recognized during the period the employee helps generate income (the matching principle).
    3. The liability for postretirement benefits is reported at its present value.
    4. Investors do not pay much attention to the liability for postretirement benefits since it is difficult to estimate.

5. Which of the following concerning deferred tax liabilities are true?

    1. Deferred tax liabilities are created when an event occurs now that leads to lower income tax payments in the future.
    2. Deferred tax liabilities represent money a company will never have to pay in taxes.
    3. Deferred tax liabilities arise because of differences in U.S. GAAP and the tax code.
    4. Deferred tax liabilities are reported, but deferred tax assets are not reported because of conservatism.

6. Myers Company leases a boat on January 1, 20X9. The lease qualifies as a capital lease. The lease covers four years, with payments of $20,000 annually, beginning on January 1, 20X9. The expected life of the boat is six years. Myers incremental borrowing rate is 4 percent. What amount of depreciation (rounded) should Myers recognize on the boat on December 31, 20X9 if Myers uses the straight-line method?

    1. $18,875
    2. $12,584
    3. $20,000
    4. $13,333

7. Which of the following is true concerning leases?

    1. Lessees would prefer to classify a lease as a capital lease than as an operating lease.
    2. Capital lease liabilities are shown at their present value.
    3. Interest is recorded on both capital and operating leases.
    4. Most capital leases are ordinary annuities.

8. Hyde Corporation has long-term liabilities, such as bonds, notes and leases, for which interest expense must be accrued. During 20X7, Hyde had earnings before interest and taxes of $45,890 and interest expense of $9,920. Which of the following is Hyde's times interest earned?

    1. 1.28 times
    2. 21.6 times
    3. 78.4 times
    4. 4.63 times

9. Fargo Corporation earns revenue in 20X2 that will be reported on its 20X2 income statement, but will not be

reported on its tax return until 20X4. The revenue amounts to $800,000 and Fargo's tax rate is 40 percent. Which of the following is a true statement?

1. Fargo should report a deferred tax liability of $800,000 in 20X2.
2. Fargo should not recognize a deferred tax liability until 20X4.
3. Fargo should report a deferred tax liability of $320,000 in 20X2.
4. Fargo should never report a deferred tax liability.

Problems

1. United Company leases an office space in a downtown building. This qualifies as an operating lease. United pays $30,000 in advance for rent every quarter. Record journal entries for United for the following:
    1. United pays $30,000 for the last quarter (three months) of the year on October 1.
    2. Rent expense on October 31
    3. Rent expense on November 30
    4. Rent expense on December 31
2. Ralph Corporation agreed to lease a piece of equipment to Amy Company on January 1, 20X4. The following info relates to the lease:
    - The lease term is five years, at the end of which time the equipment will revert back to Ralph. The life of the equipment is six years.
    - The fair value of the equipment is $500,000.
    - Payments of $115,952 will be due at the beginning of the year, with the first payment due at lease signing.
    - Amy's incremental borrowing rate is 8 percent.

    Prepare the following journal entries for Amy.
    1. Record the capital lease.
    2. Record the first payment on 1/1/X4.
    3. Record depreciation on the equipment on 12/31/X4.
    4. Record interest expense on 12/31/X4.
    5. Record the second payment on 1/1/X6.
3. Landon Corporation has decided to rent crew trucks rather than purchasing them. On April 1, 20X5, Landon enters into an agreement with TuffEnough Trucks to lease three trucks worth $200,000. The lease agreement will span six years and the life of the trucks is estimated to be seven years. Landon's incremental borrowing rate is 6 percent. The payments per year amount to $38,370, payable each April 1, beginning with 20X5.
    1. Record the capital lease.
    2. Record the first payment on 4/1/X5.
    3. Record depreciation on the equipment on 12/31/X5.

4. Record interest expense on 12/31/X5.
5. Record the second payment on 4/1/X6.

4. Rollins Company purchased stock in Yuma Corporation for $40,000. Rollins considered this purchase to be a trading security. At the end of the year, Rollin's investment in Yuma yielded an unrealized gain of $8,000. While the $8,000 unrealized gain must be reported on this year's income statement, Rollins will not report the gain on its tax return until the investment in Yuma is sold. If Rollins has a tax rate of 35 percent, prepare the journal entry Rollins should use to record this deferred tax liability.

5. In several past chapters, we have met Heather Miller, who started her own business, Sew Cool. The financial statements for December are shown below.

Figure 15.18 Sew Cool Financial Statements

Sew Cool
Income Statement
As of December 31, 20X8

Revenue	$4,000
Cost of Goods	(2,000)
Gross Profit	2,000
Other Expenses	(1,665)
Earnings before Interest and Tax	335
Interest Expense	(30)
Earnings before Tax	305
Tax Expense	(107)
Net Income	$198

Figure 15.19

Sew Cool
Stmt. of Retained Earnings
As of December 31, 20X8

Retained Earnings, December 1, 20X8	$500
Net Income	198
Dividends	(158)
Retained Earnings, December 31, 20X8	$540

Figure 15.20

Sew Cool
Balance Sheet
December 31, 20X8

Assets		**Liabilities**	
Current		**Current**	
Cash	$940	Accounts Payable	$900
Accounts Receivable	500	Income Tax Payable	120
Less Allowance for Doubtful Accounts	(20)		
Net Accounts Receivable	480		
Inventory	700		
Total Current Assets	$2,120	Total Current Liabilities	$1,020
Noncurrent		**Noncurrent**	
Equipment	$1,000	Notes Payable	$1,060
		Owners' Equity	
		Capital Stock	$500
		Retained Earnings	540
		Total Owners' Equity	$1,040
		Total Liabilities & Owners' Equity	$3,120
Total Assets	$3,120		

Based on the financial statements determine the following:

1. Debt-to-equity ratio
2. Times interest earned

6. Lori Company borrowed $10,000 from Secure Bank on January 1, 20X9. The interest rate on the loan is 6 percent annually. Lori also signed a five-year capital lease on January 1, 20X9. The payments are $5,000 each January 1, beginning with the current one. Lori's incremental borrowing rate is 6 percent *and the value of the leased asset is $22,326*.

    1. Determine Lori's 20X9 interest expense.
    2. If Lori's earnings before interest and taxes are $25,710, determine Lori's times interest earned.

7. Myrtle Inc. begins 20X8 with liabilities of $456,000 and owners' equity of $320,000. On the first day of 20X8, the following occur:

    - Myrtle enters into an operating lease where it agrees to pay $50,000 per month for warehouse space.
    - Myrtle borrows $103,000 from Community Bank.
    - Owners' invest an additional $57,000 into the company.

    1. Determine Myrtle's debt-to-equity ratio before the above transactions occur.

2. Determine Myrtle's debt-to-equity ratio considering the effect of the above transactions.

Comprehensive Problem

This problem will carry through several chapters, building in difficulty. It allows students to continuously practice skills and knowledge learned in previous chapters.

In Chapter 14 "In a Set of Financial Statements, What Information Is Conveyed about Noncurrent Liabilities Such as Bonds?", you prepared Webworks statements for February. They are included here as a starting point for March.

Figure 15.21 Webworks Financial Statements

Webworks
Income Statement
As of February 28

Revenue	$19,800
Cost of Goods Sold	(10,201)
Gross Profit	9,599
Deprec. and Amort. Expense	(455)
Other Expenses and Losses	(3,760)
Investment Income (Loss)	(175)
Earnings before Interest and Tax	5,209
Interest Expense	(15)
Earnings before Tax	5,194
Tax Expense	(1,558)
Net Income	$3,636

Figure 15.22

Webworks
Stmt. of Retained Earnings
As of February 28

Retained Earnings, February 1	$14,613
Net Income	3,636
Retained Earnings, February 28	$18,249

Figure 15.23

Webworks
Balance Sheet
February 28

Assets		**Liabilities**	
Current		**Current**	
Cash	$4,767	Accounts Payable	$2,360
Accounts Receivable	1,800	Salaries Payable	220
Less Allowance for Doubtful Accounts	(180)	Interest Payable	15
Net Accounts Receivable	1,620	Unearned Revenue	600
Trading Securities, Net	1,600		
Merchandise Inventory	2,682		
Supplies Inventory	70		
Prepaid Rent	200		
Total Current Assets	$10,939	Total Current Liabilities	$3,195
Property, Plant, and Equipment		**Noncurrent**	
Equipment	$12,500	Note Payable	$3,000
Less Accumulated Depreciation	(1,260)		
Furniture	1,000		
Less Accumulated Depreciation	(85)		
Total P, P, and E	$12,155		
Other Noncurrent Assets		**Owners' Equity**	
Available for Sale Securities	$2,100	Capital Stock	$2,000
Licensing Agreement, Net	1,600	Retained Earnings	18,249
		Other Accumulated Comprehensive Income:	
		Unrealized Gain on Available for Sale Securities	350
		Total Owners' Equity	$20,599
		Total Liabilities & Owners' Equity	$26,794
Total Assets	$26,794		

The following events occur during March:

a. Webworks starts and completes seven more Web sites and bills clients for $5,000.

b. Webworks purchases supplies worth $110 on account.

c. At the beginning of March, Webworks had nineteen keyboards costing $118 each and twenty flash drives costing $22 each. Webworks uses periodic FIFO to cost its inventory.

d. On account, Webworks purchases 80 keyboards for $120 each and 100 flash drives for $23 each.

e. Webworks sells eighty-five keyboards for $12,750 and ninety-two of the flash drives for $2,760 cash.

f. Webworks collects $5,000 in accounts receivable.

g. Webworks pays off $12,000 of its accounts payable.

h. Leon determines that some of his equipment is not being used and sells it. The equipment sold originally cost $2,000 and had accumulated depreciation of $297. Webworks sold the equipment for $1,650 cash.

i. Webworks pays Nancy $750 for her work during the first three weeks of March.

j. Leon and Nancy are having trouble completing all their work now that the business has grown. Leon hires another assistant, Juan. Webworks pays Juan $550 for his help during the first three weeks of March.

k. Webworks writes off an account receivable from December in the amount of $200 because collection appears unlikely.

l. Webworks pays off its salaries payable from March.

m. Webworks pays Leon a salary of $3,500.

n. Webworks completes the design for the bakery, but not the photographer for which it was paid in February. Only $300 of the unearned revenue should be reclassified to revenue.

o. Webworks decides that more space is needed than that which is available in the home of Leon's parents (much to his parents' relief). His parents return the $200 he prepaid for March. Webworks signs a six-month lease in a nearby office building. Webworks will pay $500 at the beginning of each month, starting on March 1. The life of the building is forty years, and no bargain purchase option exists, nor do the payments come close to paying the market value of the space.

p. Webworks pays taxes of $580 in cash.

Required:

A. Prepare journal entries for the above events.

B. Post the journal entries to T-accounts.

C. Prepare an unadjusted trial balance for Webworks for March.

D. Prepare adjusting entries for the following and post them to your T-accounts.

q. Webworks owes Nancy $200 and Juan $150 for their work during the last week of March.

r. Webworks receives an electric bill for $400. Webworks will pay the bill in April.

s. Webworks determines that it has $50 worth of supplies remaining at the end of March.

t. Webworks is continuing to accrue bad debts at 10 percent of accounts receivable.

u. Webworks continues to depreciate its equipment over five years and its furniture over five years, using the straight-line method.

v. The license agreement should be amortized over its one-year life.

w. QRS Company is selling for $13 per share and RST Company is selling for $18 per share on March 31.

x. Interest should be accrued for March.

y. Record cost of goods sold.

E. Prepare an adjusted trial balance.

F. Prepare financial statements for March.

Chapter 16: In a Set of Financial Statements, What Information Is Conveyed about Shareholders' Equity?

Video Clip

(click to see video)

Joe introduces Chapter 16 "In a Set of Financial Statements, What Information Is Conveyed about Shareholders' Equity?" and speaks about the course in general.

16.1 Selecting a Legal Form for a Business

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Describe the three primary legal forms available for a business.
2. List and discuss the advantages and disadvantages of incorporating a business rather than maintaining a sole proprietorship or partnership.
3. Explain the double taxation that is inherent in operating a corporate organization.
4. Describe the impact that the possibility of issuing capital stock has on a corporation.

Question: In the United States, businesses and other organizations must operate under one of three legal forms[1]*.A* **proprietorship** *is created by a single owner whereas a* **partnership** *is started and owned by two or more parties. Establishing ownership is often quite informal. In contrast, a* **corporation** *comes into existence by means of a formal request made to the state government. The number of owners is usually not relevant in creating a corporation. Because corporations are the dominant legal form (at least monetarily) in the world, they have been the primary emphasis throughout this text. Numerically, more proprietorships and partnerships do exist but virtually every business of any size operates as a corporation. How is a corporation established, and what characteristics make it attractive?*

Answer: Incorporation of an entity is only required in one state regardless of its size. To start this process, the original owners submit articles of incorporation to that government[2]. Rules, regulations, and requirements vary significantly so that these procedures are more complicated in some states than others. For example, many well-known businesses are incorporated in Delaware because of the ease of the laws in that state.

After all documents have been filed and all other requirements met, the state government issues a corporate charter that recognizes the organization as a legal entity separate from its ownership. This separation of the ownership is what differentiates a corporation from a partnership or proprietorship. Following incorporation in one state, the entity is then allowed to operate in any other state.

As mentioned in a previous chapter, ownership of a corporation is divided into shares of stock that are issued to raise funds. In general, these shares are referred to as capital stock and the owners as shareholders or stockholders. For example, at December 31, 2008, the stockholders of Raytheon Company held approximately 400 million of these shares. Unless restricted contractually, capital stock can be exchanged freely. Once issued by a corporation, shares can be resold dozens or even hundreds of times. Operations are usually unaffected by these ownership changes. Information about the current market price of most stocks as well as a considerable amount of other information can be found at http://www.google.com/finance and http://www.yahoo.com/finance.

Thus, a corporation is able to continue in existence even after owners die or decide to switch to other investments. In partnerships and proprietorships, capital stock does not exist. Consequently, the transfer of an ownership interest is much more complicated. Partnerships and proprietorships often operate only for as long as the original owners are willing and able to continue being actively involved.

As a result of the legal separation of ownership and business, shareholders have no personal liability for the debts of the corporation[3]. An owner of a share of Raytheon is not responsible for any of the liabilities of that company. The maximum loss a shareholder can suffer is the amount contributed to the business (or paid to a previous owner) in acquiring capital stock.

In contrast, the owners of a partnership or proprietorship are personally liable for all business debts. No separation exists between the business and the ownership. A partner or proprietor could invest $1,000 but wind up losing almost any amount if funds are borrowed by the business that cannot be repaid. Such potential losses are especially worrisome in a partnership where each partner serves as an agent for the entire organization. Under the concept of **mutual agency**, any partner can obligate the partnership and, if the debt is not paid when due, the creditor can seek redress from any other partner. The **limited liability** offered by a corporation is one of the primary reasons for its popularity. Investors have a strong preference for being able to quantify the amount of money at risk.

Question: Ownership shares of most corporations can be transferred. Thus, the life of a corporation can extend indefinitely. Caswell-Massey Co., a "purveyor of luxury personal care products," was incorporated in 1752 in Rhode Island and continues to do business today.

Investors are able to move into and out of these investments quickly. In addition, the availability of limited liability restricts potential losses to the amounts invested. These characteristics help explain the immense popularity of the corporate form. However, a significant number of partnerships and proprietorships still come into existence each year. If no problems were possible, incorporation would be the only practical option. What disadvantages are associated with corporations?

Answer: Incorporation is often a time consuming and costly legal process. However, in most states, proprietorships and partnerships can be created informally with little effort. Owners of many small businesses feel that the creation of a corporation is more trouble than it is worth. Furthermore, corporations are often more susceptible to a plethora of government regulations.

The most obvious problem associated with corporations is the **double taxation** of income. As noted, proprietorships and partnerships are not deemed to be entities separate from their owners. Therefore, income is taxed only one time. Owners pay that tax when the income is earned by their business. For a proprietorship, Schedule C is an income statement attached to the owner's individual Form 1040 income tax return to include the business's profit or loss. A partnership does file its own return on Form 1065 but that is merely for information purposes; no income tax is paid. Instead, the various business revenues and expenses are assigned to the partners for inclusion on their individual tax returns. Any eventual conveyance of this income from business to owner does not create a second tax.

In contrast, corporations are separate legal entities that pay their own taxes by filing Form 1120 to report all taxable income that has been earned[4]. However, when any dividends are eventually distributed from those earnings to the stockholders, this transfer is also viewed as taxable income to the owner. Income is taxed once when earned by the corporation and again when distributed to the owners. Critics have long argued that the collection of the dividend is not a new earning process. To mitigate the impact of this second tax, the United States Congress has established a maximum tax rate of 15 percent on much of the dividend income collected by individuals. This rate is considerably lower than that applied to most other types of income.

To illustrate, assume that income tax rates are 30 percent except for the 15 percent tax on dividends. A proprietorship (or partnership) earns a profit of $100. In this type business, the $100 is only taxable to the owner or owners when earned. Payment of the resulting $30 income tax ($100 × 30 percent) leaves $70. This is the remaining disposal income. Any distribution of this money has no impact on taxes.

If a corporation reports this same amount of income, a tax of $30 is assessed to the business so that only $70 remains. This income can then be conveyed as a dividend. However, another tax must be paid, this time by the stockholder. The second income tax is $10.50 ($70 × 15 percent). The owner is left with only $59.50 ($70.00 less $10.50) in disposal income. The increase in the amount taken by the government ($40.50 versus $30.00 on $100 of taxable income) is significant enough to reduce the inclination of many owners to incorporate their businesses.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092983.html

Key Takeaway

Businesses can exist as corporations, partnerships, or sole proprietorships. A corporation differs from the other two forms because it is an entity legally separate from its ownership. Thus, the liability of owners is limited to the amount of their investments. Corporations are formed according to individual state laws. Shares of the ownership of a corporation (capital stock) are issued to raise money for operations and growth. In many cases, these shares can be readily sold by one owner to the next, often on a stock exchange. The ability to buy and sell capital shares enables a corporation to raise funds and have a continuous life. Disadvantages associated with the corporate form include the cost and difficulty of incorporation and government regulation. The double taxation of corporate income (which is not found with partnerships and sole proprietorships) is often the biggest drawback to incorporation.

[1]In recent decades, a number of variations of these legal forms have been allowed, each with its own particular characteristics. For example, limited liability companies (LLCs) and limited liability partnerships (LLPs) are hybrids that exhibit characteristics of both partnerships and corporations and are permitted to exist in certain states.

[2]A list of the typical contents of the articles of incorporation can be found at “Articles of Incorporation,” http://en.wikipedia.org/wiki/Articles_of_Incorporation.

[3]When money is loaned to a corporation, especially one that is either new or small, the lender might require

the owners to personally guarantee the debt. However, unless such a guarantee is made, the debt is that of the corporation and not the members of the ownership.

[4]Tax rules do allow smaller corporations to file their income taxes as S corporations if certain guidelines are met. S corporations follow virtually the same tax rules as partnerships so that income is only taxed one time when initially earned.

16.2 The Issuance of Common Stock

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Identify the rights normally held by the owners of common stock.
2. Describe the responsibilities of a corporation's board of directors.
3. Define and explain the terms "authorized," "outstanding," "issued," and "par value" in relationship to common stock.
4. Record the issuance of common stock for cash.
5. Record the issuance of common stock for a service or for an asset other than cash.

Question: Several accounts frequently appear in the shareholders' equity section of a balance sheet reported by a corporation. Each has its own particular meaning. For example, as of January 3, 2009, Kellogg Company reported the following information (all numbers in millions).

Figure 16.1 Shareholders' Equity—Kellogg Company as of January 3, 2009

Common stock, $.25 par value, 1,000,000,000 shares authorized; Issued: 418,842,707 in 2008	$105
Capital in excess of par value	438
Retained earnings	4,836
Treasury stock at cost; 36,981,580 shares in 2008	(1,790)
Accumulated other comprehensive income (loss)	(2,141)
Total shareholders' equity	$1,448

Some of these terms have been examined previously, others have not. For example, "retained earnings" was described in early chapters as the increase in net assets generated by net income over the life of a company less any amounts distributed as dividends during that same period. In Chapter 12 "In a Set of Financial Statements, What Information Is Conveyed about Equity Investments?", "accumulated other comprehensive income" was discussed because it was utilized to record changes in the fair value of available-for-sale securities. Gains and losses in the worth of these investments were not included within net income. Rather, they were reported under this heading within stockholders' equity and subsequently used in computing comprehensive income.

Common stock *has also been mentioned in connection with the capital contributed to a company by its owners. However, Kellogg communicates additional information about its common stock such as the number of authorized*

and issued shares as well as its par value. What is common stock? That seems the logical first step in analyzing the information provided by a company about its capital shares.

Answer: Common stock represents the basic ownership of a corporation. One survey in 2007 found that common stock is the only type of capital stock issued by approximately 90 percent of corporations (Iofe & Calderisi, 2008). Obtaining ownership of a company's common stock provides several distinct rights. However, the specific rights are set by the laws of the state of incorporation and do vary a bit from state to state[1].

Typical Corporate Ownership Structure

- Based on state laws and the corporation's own rules, the owners of common stock are allowed to vote on a few specified issues. By far the most prevalent is the election of the board of directors. As mentioned in Chapter 1 "Why Is Financial Accounting Important?", these individuals represent the ownership of the corporation in overseeing the management. The **board of directors** meets periodically (annually, quarterly, or as necessary) to review operating results and the future plans created by management. The board provides guidance and changes where necessary. A list of the individuals (often ten to twenty-five) who serve in this capacity is usually included in a corporation's annual report, often just after its financial statements.
- The responsibilities of the board of directors can vary rather significantly from company to company. Some boards do little whereas others are heavily involved in strategy and policy making. For example, a note to the financial statements of Starbucks Corporation explained that the "Company may repurchase shares of its common stock under a program authorized by its Board of Directors." Apparently, approval of that particular program fell within the designated responsibilities of the Starbucks board.
- One of the most important decisions for any board of directors is the declaration of dividends. Management typically cannot pay dividends to shareholders without specific approval by the board. Dividends cause the company (and specifically its cash balances) to get smaller so careful consideration of the impact must be made before declaration is approved. Stockholders like to receive dividends but do not want the company's future to be imperiled as the size shrinks.
- If dividends are paid on common stock, all the owners share proportionally. Although dividends are never guaranteed, the owners must be treated fairly if dividends are distributed. An owner who holds 12 percent of the outstanding common stock is entitled to 12 percent of any dividends paid on common stock. The board of directors cannot reward some of the common shareholders while ignoring others.
- Should the company ever be liquidated, the common stock shareholders are entitled to share proportionally in any assets that remain after all liabilities and other claims are settled. Unfortunately, most liquidations result from a severe financial crisis so that holding any assets at the end of the process is rare.

Question: "Authorized," "issued," and "par value" are terms mentioned by the Kellogg Company in describing its ownership shares. What terms are associated with capital stock and what do they mean?

Answer:

Authorized. In applying to the state government as part of the initial incorporation process, company officials indicate the maximum number of capital shares they want to be able to issue. This approved limit is the authorized total. Corporations often set this figure so high that they never have to worry about reaching it. However, states do allow the authorization to be raised if necessary.

Issued. The number of issued shares is simply the quantity that has been sold or otherwise conveyed to owners. Kellogg reports that one billion shares of common stock were authorized by the state of Delaware but only about 419 million have actually been issued to stockholders as of the balance sheet date. The remaining unissued shares are still available if the company needs to raise money by selling additional capital stock.

Outstanding. The total amount of stock currently in the hands of the public is referred to as the shares "outstanding." Shares are sometimes bought back from stockholders and recorded as treasury stock. Thus, originally issued shares are not always still outstanding. According to the information provided, Kellogg has acquired nearly thirty-seven million treasury shares. Although not mentioned directly, Kellogg now has only 382 million shares of common stock outstanding in the hands of the stockholders (419 million issued less 37 million treasury shares). This number is important because it serves as the basis for dividend payments as well as any votes taken of the stockholders.

Par value. The most mysterious term on a set of financial statements might well be "par value." The requirement for a par value to be set was created decades ago in connection with the issuance of stock. It is printed on the face of a stock certificate and indicates (again depending on state law) the minimum amount of money that owners must legally leave in the business. By requiring a par value to be specified on the stock certificate, state lawmakers hoped to prevent a corporation from borrowing money that was then distributed to a few owners before bankruptcy was declared.

Traditionally, companies have gotten around this limitation by setting the par value at an extremely low number[2]. For example, Kellogg discloses a par value of $0.25 for its common stock, which is actually quite high. Many companies report par values that fall between a penny and a nickel. The balance sheet for Barnes & Noble shows a par value for its common stock of one-tenth of a penny.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093025.html

Question: Over the years, one residual effect from the requirement to include a par value on stock certificates has remained. This figure is still used in reporting the issuance of capital stock. Thus, if Kellogg sells one share for cash of $46.00 (the approximate value on the New York Stock Exchange during the summer of 2009), the common

stock account is increased but only by the $0.25 par value. Kellogg receives $46.00 but the par value is only $0.25. How can this journal entry balance?
How does a company report the issuance of a share of common stock for more than par value?

Answer: A potential stockholder contributes assets to a company in order to obtain an ownership interest. In accounting, this conveyance is not viewed as an exchange. It is fundamentally different from selling inventory or a piece of land to an outside party. Instead, the contribution of monetary capital is an expansion of both the company and its ownership. As a result, no gain, loss, or other income effect is ever reported by an organization as a result of transactions occurring in its own stock. An investor is merely transferring assets to a corporation to be allowed to join its ownership.

Consequently, a second shareholders' equity balance is created to report the amount received above par value. Kellogg uses the title "capital in excess of par value" but a number of other terms are frequently encountered such as "additional paid-in capital."

Kellogg records the issuance of a share of $0.25 par value common stock for $46 in cash as follows[3].

Figure 16.2 Issuance of a Share of Common Stock for Cash

Cash	46.00	
Common stock (par value)		.25
Capital in excess of par value		45.75

On the balance sheet, within the stockholders' equity section, the amount that owners put into a corporation when they originally bought stock is the summation of the common stock and capital in excess of par value accounts. This total reflects the assets conveyed to the business in exchange for capital stock. For Kellogg, that figure is $543 million, the amount received from its owners since operations first began.

Figure 16.3 Kellogg Common Stock and Capital in Excess of Par Value[4]

Common Stock	$105 million
Capital in Excess of Par Value	438 million
Total Contributed Capital	$543 million

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093026.html

Question: Common stock is sometimes issued in exchange for property or personal services rather than for cash. Such contributions are especially prevalent when a small corporation is first getting started. Potential owners may hold land, buildings, or other assets needed by the business. Or, an accountant, attorney, or the like might

be willing to provide expert services and take payment in stock. This arrangement can be especially helpful if the business is attempting to conserve cash. What recording is made if capital stock is issued for a service or an asset other than cash?

Answer: The issuance of stock for an asset or service is not technically a trade[5] but the accounting rules are the same. The asset or the service received by the corporation is recorded at the fair value of the capital stock surrendered. That is the equivalent of historical cost. It is a measure of the sacrifice made by the business to get the asset or service. However, if the fair value of the shares of stock is not available (which is often the case for new and smaller corporations), the fair value of the property or services received becomes the basis for reporting.

To illustrate, assume that a potential investor is willing to convey land with a fair value of $125,000 to the Maine Company in exchange for an ownership interest. During negotiations, officials for Maine offer to issue ten thousand shares of $1 par value common stock for this property. The shares are currently selling on a stock exchange for $12 each. The investor decides to accept this proposal rather than go to the trouble of trying to sell the land.

The "sacrifice" made by the Maine Company to acquire this land is $120,000 ($12 per share × 10,000 shares). Those shares could have been sold on the stock exchange to raise that much money. Instead, Maine issues them directly in exchange for the land and records the transaction as follows.

Figure 16.4 Issue Ten Thousand Shares of Common Stock Worth $12 per Share for Land

Land	120,000	
Common Stock ($1 par value × 10,000 shares)		10,000
Capital in Excess of Par Value ($120,000 less $10,000)		110,000

If this stock was not selling on a stock exchange, fair value might not be apparent. In that situation, the Maine Company should recognize the land at its own fair value of $125,000 with an accompanying $5,000 increase in the capital in excess of par value account.

Key Takeaway

Common stock forms the basic ownership units of most corporations. The rights of the holders of common stock shares are normally set by state law but include voting for a board of directors to oversee current operations and future plans. Financial statements often indicate the number of authorized shares (the maximum allowed), issued shares (the number that have been sold), and outstanding shares (those currently in the hands of owners). Common stock usually has a par value although the meaning of this number has faded in importance over the decades. Upon issuance, common stock is recorded at par value with any amount received above that figure reported in an account such as capital in excess of par value. If issued for an asset or service instead of cash, the recording is based on the fair value of the shares given up. However, if that value is not available, the fair value of the asset or service is used.

[1]Although the Kellogg Company has its headquarters in Battle Creek, Michigan, the company is incorporated in the state of Delaware. Thus, the laws of Delaware set the rights of the common stock shares for this company.

[2]Many other laws have been passed over the years that have been much more effective at protecting both creditors and stockholders.

[3]A few states allow companies to issue stock without a par value. In that situation, the entire amount received is entered in the common stock account.

[4]As mentioned in the previous chapter, the sales of capital stock that occur on the New York Stock Exchange or other stock markets are between investors and have no direct effect on the company. Those transactions simply create a change in ownership.

[5]As mentioned earlier, the issuance of capital stock is not viewed as a trade by the corporation because it merely increases the number of capital shares outstanding. It is an expansion of both the company and its ownership. That is different from, for example, giving up an asset such as a truck in exchange for a computer or some other type of property.

References

Iofe, Y., senior editor, and Matthew C. Calderisi, CPA, managing editor, *Accounting Trends & Techniques*, 62nd edition (New York: American Institute of Certified Public Accountants, 2008), 289.

16.3 Issuing and Accounting for Preferred Stock and Treasury Stock

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Explain the difference between preferred stock and common stock.
2. Discuss the distribution of dividends to preferred stockholders.
3. Record the issuance of preferred stock.
4. Define “treasury stock” and provide reasons for a corporation to spend its money to acquire treasury stock.
5. Account for the purchase and resale of treasury stock, with both gains and losses occurring.

Question: Some corporations also issue a second type of capital stock referred to as preferred stock. Probably about 10–15 percent of companies in the United States have preferred stock outstanding but the practice is more prevalent in some industries. How is preferred stock different from common stock?

Answer: Preferred stock is another version of capital stock where the rights of those owners are set by the contractual terms of the stock certificate rather than state law. In effect, common stockholders are voluntarily surrendering one or more of their rights in hopes of enticing additional investors to contribute money to the corporation. For common stockholders, preferred stock is often another possible method of achieving financial leverage in the same manner as using money raised from bonds and notes.

The term “preferred stock” comes from the preference that is conveyed to these owners. They are being allowed to step in front of common stockholders when the specified rights are applied. A wide variety of benefits can be assigned to the holders of preferred shares, including additional voting rights, assured representation on the board of directors, and the right to residual assets if the company ever liquidates.

By far the most typical preference is to cash dividends. As mentioned earlier in this chapter, all common stockholders are entitled to share proportionally in any dividend distributions. However, if a corporation issues preferred stock with a stipulated dividend, that amount must be paid before any money is conveyed to the owners of common stock. No dividend is ever guaranteed, not even one on preferred shares. A dividend is only legally required if declared by the board of directors. But, if declared, the preferred stock dividend comes before any common stock dividend.

Common stock is often referred to as a residual ownership because these shareholders are entitled to all that remains after other claims have been settled including those of preferred stock.

The issuance of preferred stock is accounted for in the same way as common stock. Par value, though, often

serves as the basis for specified dividend payments. Thus, the par value listed for a preferred share frequently approximates fair value. To illustrate, assume that a corporation issues ten thousand shares of preferred stock. A $100 per share par value is printed on each stock certificate. If the annual dividend is listed as 4 percent, $4 per year ($100 par value × 4 percent) must be paid on preferred stock before any distribution is made on the common stock.

If ten thousand shares of this preferred stock are each issued for $101 in cash ($1,010,000 in total), the company records the following journal entry.

Figure 16.5 Issue Ten Thousand Shares of $100 Par Value Preferred Stock for $101 per Share

Companies often establish two separate "capital in excess of par value" accounts—one for common stock and one for preferred stock. They are then frequently combined in reporting the balances within stockholders' equity.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093027.html

Question: An account called **treasury stock** *is often found near the bottom of the shareholders' equity section of the balance sheet. Treasury stock represents issued shares of a corporation's own stock that have been reacquired. For example, the December 31, 2008, balance sheet for Viacom Inc. reports a negative balance of nearly $6 billion identified as treasury stock.*

A 2004 story in the Wall Street Journal *indicated that Viacom had been buying and selling its own stock for a number of years: "The $8 billion buyback program would enable the company to repurchase as much as 13 percent of its shares outstanding. The buyback follows a $3 billion stock-purchase program announced in 2002, under which 40.7 million shares were purchased*" (Flint, 2004).

Why does a company voluntarily give billions of dollars back to stockholders in order to repurchase its own stock? That is a huge amount of money leaving the company. Why not invest these funds in inventory, buildings, investments, research and development, and the like?
Why does a corporation buy back its own shares as treasury stock?

Answer: Numerous possible reasons exist to justify spending money to reacquire an entity's own stock. Several of these strategies are rather complicated and a more appropriate topic for an upper-level finance course. However, an overview of a few of these should be helpful in understanding the rationale for such transactions.

- As a reward for service, businesses often give shares of their stock to key employees or sell them shares at a relatively low price. In some states, using unissued shares for such purposes can be restricted legally. The same rules do not apply to shares that have been reacquired. Thus, a corporation might acquire treasury shares to have available as needed for compensation purposes.
- Acquisition of treasury stock can be used as a tactic to push up the market price of a company's stock in order to please the remaining stockholders. Usually, a large scale repurchase (such as that made by Viacom) indicates that management believes the stock is undervalued at its current market price. Buying treasury stock reduces the supply of shares in the market and, according to economic theory, forces the price to rise. In addition, because of the announcement of the repurchase, outside investors often rush in to buy the stock ahead of the expected price increase. The supply of shares is decreased while demand for shares is increased. Stock price should go up. Not surprisingly, current stockholders often applaud the decision to buy treasury shares as they anticipate a jump in their investment values.
- Corporations can also repurchase shares of stock to reduce the risk of a hostile takeover. If another company threatens to buy enough shares to gain control, the board of directors of the target company must decide if acquisition is in the best interest of the stockholders[1]. If not, the target might attempt to buy up shares of its own treasury stock in hopes of reducing the number of owners in the market who are willing to sell their shares. It is a defensive strategy designed to make the takeover more difficult to accomplish. Plus, as mentioned above, buying back treasury stock should drive the price up, making purchase more costly for the predator.

Question: To illustrate the financial reporting of treasury stock, assume that the Chauncey Company has issued ten million shares of its $1 par value common stock at an average price of $3.50 per share. The company now reacquires three hundred thousand of these shares for $4 each. How is the acquisition of treasury stock reported?

Answer: Under U.S. GAAP, several methods are allowed for reporting the purchase of treasury stock. Most companies appear to use the cost method because of its simplicity. The acquisition of these shares by Chauncey is recorded at the $1.2 million (three hundred thousand shares at $4 each) that was paid.

Figure 16.6 Purchase of Three Hundred Thousand Shares of Treasury Stock at a Cost of $4 Each

Because the cost of treasury stock represents assets that have left the business, this account balance is shown within stockholders' equity as a negative amount, reflecting a decrease in net assets instead of an increase.

Except for possible legal distinctions, treasury stock is the equivalent of unissued stock. It does not receive **dividends** and has no voting privileges.

Question: Treasury shares can be held forever or eventually sold at prices that might vary greatly from original cost. If sold for more, is a gain recognized? If sold for less, is a loss reported?
What is the impact on a corporation's financial statements if treasury stock is reissued?
To illustrate, assume that Chauncey Company subsequently sells one hundred thousand shares of its treasury stock for $5.00 each. That is $1.00 more than these shares cost to reacquire. Is this excess reported as a gain within net income?

Answer: As discussed previously, transactions in a corporation's own stock are considered expansions and contractions of the ownership and never impact reported net income. The buying and selling of capital stock are viewed as fundamentally different from the buying and selling of assets. Therefore, this reissuance is recorded by Chauncey through the following journal entry.

Figure 16.7 Sale of One Hundred Thousand Shares of Treasury Stock Costing $4 Each for $5 per Share

Cash	500,000	
Treasury Stock (Cost)		400,000
Capital in Excess of Cost—Treasury Stock		100,000

The "capital in excess of cost-treasury stock" is the same type of account as the "capital in excess of par value" that was recorded in connection with the issuance of both common and preferred stocks. Within stockholders' equity, these accounts can be grouped or reported separately.

Question: Assume that Chauncey later sells another one hundred thousand of the treasury shares, but this time for only $2.60 each. The proceeds in this transaction are below the acquisition cost of $4 per share. What recording is made if treasury stock is sold at the equivalent of a loss?

Answer: Interestingly, the selling of treasury stock below cost is a transaction not well covered in U.S. GAAP. Authoritative rules fail to provide a definitive rule for reporting this reduction except that stockholders' equity should be decreased with no direct impact recorded in net income.

The most common approach seems to be to first remove any capital in excess of cost recorded by the sale of earlier shares of treasury stock at above cost. If that balance is not large enough to absorb the entire reduction, a decrease is made in retained earnings as shown below. The $100,000 balance in capital in excess of cost-treasury stock was created in the previous journal entry.

Figure 16.8 Sale of One Hundred Thousand Shares of Treasury Stock Costing $4 Each for $2.60 per Share

Cash	260,000	
Capital in Excess of Cost—Treasury Stock	100,000	
Retained Earnings	40,000	
Treasury Stock (Cost)		400,000

One outcome of this handling should be noted. In the early chapters of this textbook, "retained earnings" was defined as all income reported over the life of a business less all dividend distributions to the owners. Apparently, this definition is not absolutely correct in all possible cases. In the above journal entry, retained earnings are also reduced as a result of a stock transaction where a loss occurred that could not otherwise be reported.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093028.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093007.html

Key Takeaway

A corporation can issue preferred stock as well as common stock. Preferred shares are given specific rights that come before those of common stockholders. Usually, these rights involve the distribution of dividends. A set payment amount is often required before common stockholders receive any dividend. Subsequently, capital stock shares can be bought back from investors for a number of reasons. If so, they are known as treasury stock. In acquiring these shares, money flows out of the company so the account is reported as a negative balance within stockholders' equity. If resold, the treasury stock account is reduced and capital in excess of cost is recognized if an amount above cost is received. However, if resold at a loss, any previous capital in excess of cost balance is removed followed by a possible reduction in retained earnings.

[1]If the board of directors does agree to the purchase of the corporation by an outside party, the two sides then negotiate a price for the shares as well as any other terms of the acquisition.

References

Flint, J., "Viacom Plans Stock Buy Back, Swings to Loss on Blockbuster," *The Wall Street Journal*, October 29, 2004, B-2.

16.4 The Issuance of Cash and Stock Dividends

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Identify the various dates associated with a dividend distribution.
2. Prepare all journal entries to report a cash dividend payment.
3. Define the characteristics of a cumulative dividend.
4. Explain the rationale for a stock dividend or stock split.
5. Record the issuance of a stock dividend.

Question: As stated in Chapter 1 "Why Is Financial Accounting Important?", a vast majority of investors purchase capital stock for only two reasons: price appreciation and dividends. Dividends and long-term capital gains (gains on the sale of certain investments that have been held for over a year) are especially appealing to individual investors because they are taxed at a lower rate than most other types of income.

Dividends are usually paid in cash and represent the profits of a business being passed along to the owners. Because the corporation is effectively giving away its assets, dividends require formal approval by the board of directors—known as a dividend declaration. The board considers current cash balances as well as the projected needs of the business before deciding on the amount, if any, of a dividend payment. How does a corporation report the declaration and distribution of a cash dividend?

Answer: Dividends provide a meaningful signal to investors about the financial health of a business. Some corporations even boast about having paid a constant or rising annual dividend for many years. Unfortunately, one result of recent economic times has been that a number of businesses have been forced to reduce or even eliminate dividend distributions. Such decisions typically lead to a drop in the market price of a corporation's stock because of the negative implications.

Other businesses stress rapid growth and rarely, if ever, pay a cash dividend. The board of directors prefers that all profits remain in the business to stimulate future growth. For example, Netflix Inc. reported net income for 2008 of over $83 million but paid no dividend.

Chronologically, accounting for dividends involves several dates with approximately two to five weeks passing between each:

- The **date of declaration**
- The **date of record** (and the related ex-dividend date)

- The **date of payment** (also known as the date of distribution)

To illustrate, assume that the Hurley Corporation has one million shares of authorized common stock. To date, three hundred thousand of these shares have been issued but twenty thousand shares were recently bought back as treasury stock. Thus, 280,000 shares are presently outstanding, in the hands of investors. Hurley earned a reported net income of $780,000 in the current year. After some deliberations, the board of directors has decided to distribute a $1.00 cash dividend on each share of common stock.

The day on which the Hurley board of directors formally decides on the payment of this dividend is known as the date of declaration. Legally, this action creates a liability for the company that must be reported in the financial statements. Only the owners of the 280,000 shares that are outstanding will receive this distribution.

Figure 16.9 $1.00 per Share Dividend Declared by Board of Directors

As discussed previously, dividend distributions reduce the amount reported as retained earnings but have no impact on reported net income.

When the dividend is declared by the board, the date of record is also set. All shareholders who own the stock on that day qualify for receipt of the dividend. The ex-dividend date is the first day on which an investor is not entitled to the dividend. Because receipt of the dividend has been lost, the market price of the stock typically drops by approximately the amount of the dividend on the ex-dividend date although myriad other market factors always influence the movement of stock prices.

No journal entry is recorded by the corporation on either the date of record or the ex-dividend date because they do not relate to any event or transaction. Those dates simply allow Hurley to identify the owners to whom the dividend will be paid.

On the date of payment, the corporation mails checks to the appropriate recipients, an event recorded as follows.

Figure 16.10 Payment of $1.00 per Share Cash Dividend

Question: Assume that Wington Company issues a share of $100 par value preferred stock to an investor on January 1, Year One. The preferred stock certificate discloses an annual dividend rate of 8 percent. Thus, dividend payment is $8 each year ($100 × 8 percent). At the end of Year One, Wington faces a cash shortage and is unable to pay this dividend. Have the owners of the preferred shares lost the right to the Year One dividend? Must a corporation report a liability if a preferred stock dividend is not paid at the appointed time?

Answer: Preferred stock dividends are often identified on the stock certificate as "**cumulative**." This term means that the obligation for all unpaid dividends on these shares must be met before dividends can be distributed on common stock. Cumulative dividends are referred to as "in arrears" when past due.

If the dividend on the preferred shares of Wington is cumulative, the $8 is in arrears at the end of Year One. In the future, this (and any other) missed dividend must be paid before any distribution on common stock can be considered. Conversely, if a preferred stock is noncumulative, a missed dividend is simply lost to the owners. It has no impact on the future allocation of dividends between preferred and common shares.

The existence of a cumulative preferred stock dividend in arrears is information that must be disclosed in financial statements. However, the balance is not reported as a liability. Only dividends that have been formally declared by the board of directors are recorded as liabilities. If cumulative, a note to the financial statements should explain Wington's obligation for any preferred stock dividends in arrears.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093030.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092987.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093009.html

Question: A corporate press release issued on May 19, 2009, informed the public that "Green Mountain Coffee Roasters Inc. today announced that its Board of Directors has approved a three-for-two **stock split** *to be effected in the form of a stock dividend. The Company will distribute one additional share of its common stock to all shareholders of record at the close of business on May 29, 2009, for every two shares of common stock held on that date. The shares will be distributed on June 8, 2009."*

Obviously, as shown by this press release, a corporation can issue additional shares of stock to shareholders instead of distributing only cash dividends. These shares can be issued as a **stock dividend** *or in a slightly different manner as a stock split*[1]*.No assets are distributed in either of these scenarios—just more shares of the company's own stock. Are shareholders better off when they receive additional shares in a stock dividend?*

Answer: When a stock dividend is issued, the number of shares held by every investor increases but their percentage ownership stays the same. Their ownership interest in the corporation remains proportionally unchanged.

To illustrate, assume that the Red Company reports net assets of $5 million. Janis Samples owns one thousand of the outstanding ten thousand shares of this company's common stock. She holds a 10 percent ownership interest (1,000/10,000) in a business that holds net assets of $5 million.

The board of directors then declares and distributes a 4 percent stock dividend. For each one hundred shares that a stockholder possesses, Red Company issues an additional 4 shares (4 percent of one hundred). Thus, four hundred new shares are conveyed to the ownership as a whole (4 percent of ten thousand) which raises the total number of outstanding shares to 10,400. However, a stock dividend has no actual impact on the corporation. There are simply more shares outstanding. Nothing else has changed.

Janis Samples receives forty of these newly issued shares (4 percent of one thousand) so that her holdings have grown to 1,040 shares. After this stock dividend, she still owns 10 percent (1,040/10,400) of the outstanding stock of Red Company and it still reports net assets of $5 million. The investor's financial position has not improved; she has gained nothing as a result of this stock dividend.

Not surprisingly, the investor makes no journal entry in accounting for the receipt of a stock dividend. No change has taken place except for the number of shares being held.

However, the corporation does make a journal entry to record the issuance of a stock dividend although it creates no impact on either assets or liabilities. The retained earnings balance is decreased by the fair value of the shares issued while contributed capital (common stock and **capital in excess of par value**) are increased by the same amount.

According to U.S. GAAP, if a stock dividend is especially large (in excess of 20–25 percent of the outstanding shares), the change in retained earnings and contributed capital is recorded at par value rather than fair value[2].

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092989.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093010.html

Question: *If no changes occur in the makeup of a corporation as the result of a stock dividend, why does a board of directors choose to issue one?*

Answer: The primary purpose served by a stock dividend (or a stock split) is a reduction in the market price of the corporation's capital stock. When the price of a share of stock rises to a high level, fewer investors are willing to make purchases. At some point, market interest wanes. The resulting reduction in demand will likely have a negative impact on the stock price. A growing company might find that a previously escalating trend in its market value has hit a plateau when the price of each share rises too high

By issuing a large quantity of new shares (sometimes two to five times as many shares as were outstanding), the price falls, often precipitously. For example, an owner who held one hundred shares at a market price of $120 per share (total value of $12,000) might now have two hundred shares selling at $60 per share or three hundred shares selling at $40 per share (but with the same total market value of $12,000). The stockholder's investment remains unchanged but, hopefully, the stock is now more attractive to investors at the lower price so that the level of active trading increases.

Stock dividends also provide owners with the possibility of other benefits. For example, cash dividend payments usually drop after a stock dividend but not always in proportion to the change in the number of outstanding shares. An owner might hold one hundred shares of common stock in a corporation that has paid $1 per share as an annual cash dividend over the past few years (a total of $100 per year). After a 2-for-1 stock dividend, this person now owns two hundred shares. The board of directors might then choose to reduce the annual cash dividend to only $0.60 per share so that future payments go up to $120 per year (two hundred shares × $0.60 each). Such a benefit, though, is not guaranteed. The investors can merely hope that additional cash dividends will be received.

Key Takeaway

Many corporations distribute cash dividends after a formal declaration is passed by the board of directors. Journal entries are required on both the date of declaration and the date of payment. The date of record and the ex-dividend date are important in identifying the owners entitled to receive the dividend but no transaction occurs. Hence, no recording is made on those dates. Preferred stock dividends are often cumulative so that any dividends in arrears must be paid before a common stock distribution can be made. Dividends in arrears are not recorded as liabilities until declared. Stock dividends and stock splits are issued to reduce the market price of capital stock and keep potential investors interested in the possibility of acquiring ownership. A stock dividend is recorded as a reduction in retained earnings and an increase in contributed capital. However, stock dividends have no immediate impact on the financial condition of either the company or its stockholders.

[1]As can be seen in this press release, the terms "stock dividend" and "stock split" have come to be virtually interchangeable to the public. Both terms were used by Green Mountain. However, minor legal differences do exist that actually impact reporting. Par value is changed to create a stock split but not for a stock dividend. Interestingly, stock splits have no reportable impact on financial statements but stock dividends do. Therefore, only stock dividends will be described in this textbook.

[2]A stock dividend of between 20 and 25 percent can be recorded at either fair value or par value.

16.5 The Computation of Earnings per Share

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Compute and explain return on equity.
2. Discuss the reasons that earnings per share (EPS) figures are so closely watched by investors.
3. Calculate basic EPS with or without the existence of preferred stock.
4. Explain the relevance of the P/E ratio.
5. Identify the informational benefit provided by diluted EPS.

Question: Throughout this textbook, various vital signs have been presented. They include ratios, numbers, percentages, and the like that are commonly studied by investors as an indication of current financial health and future prosperity. One common measure is **return on equity (ROE)**. *How does an interested party calculate the return on equity reported by a business?*

Answer: Return on equity reflects the profitability of a company based on the size of the owners' claim to net assets as shown primarily through contributed capital and retained earnings. It is simply the reported net income divided by average shareholders' equity for the period.

return on equity = net income/average shareholders' equity

For example, PPG Industries began 2008 with total shareholders' equity of $4,151 million and ended that year with a balance of $3,333 million. For the year ended December 31, 2008, PPG reported net income of $538 million for a return on equity of 14.4 percent.

average shareholders' equity: ($4,151 million + $3,333 million)/2 = $3,742 million
return on equity: $538 million/$3,742 million = 14.4%

Question: No single "vital sign" that is computed to help investors analyze a business and its financial health is more obsessively watched than earnings per share (EPS). Corporations even call press conferences to announce their latest EPS figures. According to U.S. GAAP, public companies are required to present EPS for each period that net income is reported. As just one example, Pfizer Inc. disclosed EPS of $1.20 on its income statement for the year ended December 31, 2008. Why is the EPS reported by a corporation so closely monitored by the investment community?

Answer: The simple reason for the public fascination with EPS is that this number is generally considered to be linked to the market price of a company's capital stock. Therefore, constant and wide-scale speculation takes place about future EPS figures. If analysts merely predict an increase in EPS, that forecast alone can lead to a surge in stock price.

A **price-earnings ratio (P/E ratio)** is even computed to help quantify this relationship. The P/E ratio is the current price of the stock divided by the latest EPS figure. It enables investors to anticipate movements in the price of a stock based on their projections of earnings per share. If a company's P/E ratio is twenty and is expected to remain constant, then an increase in EPS of $1 should lead to a $20 rise in stock price.

Figure 16.11 As of July 8, 2009, the P/E ratio for Several Prominent Companies

The ongoing debate as to whether EPS and the P/E ratio are over emphasized as investing tools is a controversy better left to upper-level finance courses. The fascination is certainly real regardless of whether the perceived benefits are as great as many believe.

Question: *How is EPS calculated?*

Answer: EPS is a common stock computation designed to measure operating results after all other claims have been satisfied. In simplest form, EPS (often referred to as **basic EPS**) is the net income for the period divided by the weighted average number of outstanding shares of common stock. The company's income is allocated equally to each of these shares.

To illustrate, assume a business organization reports net income of $700,000. If an average of 200,000 shares of common stock is outstanding for this period of time, EPS is $700,000/200,000 or $3.50 per share. If the market price of this stock is $35, then the P/E ratio is 35/3.50, or ten.

Because EPS only relates to common stock, this computation is altered slightly if **preferred stock** shares are also outstanding. Preferred stock is normally entitled to its dividend before common stock has any claim. Therefore, in determining basic EPS, any preferred stock dividend must be removed to arrive at the portion of income that is attributed to the ownership of common stock.

Basic EPS
(net income – preferred stock dividend)/average number of common shares outstanding

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093052.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093034.html

Question: For the year ended March 31, 2009, the McKesson Corporation reported basic EPS of $2.99 per share. However, the company also reported a second figure, diluted EPS, that was only $2.95 per share. What is the meaning of diluted EPS?
Why is diluted EPS also reported by some businesses along with basic EPS?

Answer: All publicly traded companies must disclose basic EPS. Income reported for the period (after removal of any preferred stock dividends) is allocated evenly over the weighted average number of shares of outstanding common stock. Basic EPS is mechanically derived based on historically reported income and share figures.

Many corporations also have other contractual obligations outstanding that could become common stock and, therefore, potentially affect this computation. Stock options, convertible bonds, and convertible preferred stock can each be exchanged in some manner for common stock shares. That decision is usually up to the holder and out of the control of the company. If these conversions were to transpire, the additional shares could cause EPS to drop—possibly by a significant amount. This potential reduction should be considered by investors in making any assessment of EPS.

Diluted EPS serves as a warning to decision makers of the possible impact that the existence of these convertibles can have on ownership. It is a hypothetical computation that gives weight to the chance that such conversions will take place. The actual mechanical steps in this process are better left to an intermediate accounting course. However, an understanding of the purpose of reporting diluted EPS is worthwhile.

Stock options, convertible bonds, convertible preferred stocks, and the like could become common stock and reduce a company's earnings per share. Thus, U.S. GAAP requires that this possible impact is calculated and shown by the reporting of a lower diluted EPS. For the McKesson Corporation, if all other transactions stayed the same except that its convertible items were exchanged for common stock, basic EPS would drop from $2.99 to $2.95. That is the possible dilution that could be caused by the presence of items convertible into common stock. For an investor or potential investor, that is information of interest. Including this figure alerts them to the possibility of such conversions and helps them quantify the potential impact.

Key Takeaway

Return on equity (ROE) is one percentage often computed by market analysts to help evaluate the profitability of a business. However, the reporting of earnings per share (EPS) draws a much greater circle of interest. Basic EPS must be reported by every publicly traded company for each year in which net income is reported. Basic EPS is the net income for the period divided by the weighted average number of shares of common stock outstanding. Because EPS is only determined for common stock, any preferred stock dividends must be removed from net income as a preliminary step in carrying out this computation. The resulting figure is viewed as having a major impact on the movement of the company's stock price. The price-earnings (P/E) ratio even quantifies that effect. If a corporation also has items such as stock options or convertible bonds that can be turned into common stock, conversion could potentially have an adverse impact on EPS. Thus, where such contractual obligations are outstanding, diluted EPS must also be reported to help investors understand the possible impact of future conversions.

Talking with a Real Investing Pro (Continued)

Following is a continuation of our interview with Kevin G. Burns.

Question: Investors in the United States seem to have an obsession about the reporting of earnings per share. Even slight movements in projected EPS figures can create significant swings in the market price of a company's stock. Do you think there is an overemphasis on EPS in the public's investing decisions? How closely do you pay attention to EPS figures that are reported by the businesses that you are following?

Kevin Burns: This is a very good question. By now students must realize that accounting is really all about estimates. Although investors would like accounting to be objectively exact, reporting such estimates really requires an awful lot of subjectivity. For example, for many years, General Electric would almost always report EPS a penny or two above market expectations. This was quarter after quarter like clockwork. It got to the point where if the company didn't "beat" the estimates on the street by a penny or two, the market was disappointed. It is absurd to believe that this is meaningful. This is especially true when earnings can also be managed simply by delaying or speeding up a major transaction from one time period to another. So, yes, I believe that EPS, although important, is not the ultimate piece of information that some investors seem to think. I am much more concerned about asset values, growth prospects, and what a company does with the cash it is able to generate.

Video Clip

" href="http://app.wistia.com/embed/medias/b0a9c69a1e" class="replaced-iframe">(click to see video)

Unnamed Author talks about the five most important points in Chapter 16 "In a Set of Financial Statements, What Information Is Conveyed about Shareholders' Equity?".

16.6 End-of-Chapter Exercises

Questions

1. What are the three legal forms of business?
2. How does the number of owners differ among the three forms?
3. What is the process for incorporating a business?
4. What liability do stockholders have for a corporation's debts?
5. Explain the "double taxation" concept as it applies to corporations.
6. Define "common stock."
7. List three rights normally held by common stockholders.
8. Define "authorized" number of shares of common stock.
9. Define "issued" number of shares of common stock.
10. Define "outstanding" shares of common stock.
11. Explain the meaning of "par value" of a share of stock.
12. Why is preferred stock called "preferred"?
13. What is treasury stock?
14. Give three reasons a corporation might want to buy back its own stock.
15. What is a dividend?
16. What is a cumulative dividend?
17. What is a stock dividend?
18. What is the difference in accounting between a small stock dividend and a large stock dividend?
19. Why do corporations issue stock dividends?
20. How is return on equity calculated?
21. How is a company's price-earnings ratio calculated?
22. How is basic earnings per share determined?
23. Why would a company be required to report diluted earnings per share?

True or False

1. ____ Sole proprietorships are easier to form than corporations.
2. ____ Common stockholders are usually permitted to vote for a corporation's board of directors, but preferred stockholders are not.
3. ____ Earnings per share is one of the most watched metrics of a corporation.

4. ____ Preferred dividends must be paid annually.
5. ____ Partnerships and corporations are both subject to double taxation.
6. ____ A corporation with stock options had to report diluted earnings per share.
7. ____ A small stock dividend will typically result in a smaller debit to retained earnings than a large stock dividend.
8. ____ It is not possible for a corporation to have more outstanding shares of stock than authorized shares of stock.
9. ____ Most companies choose a relatively large par value for their stock.
10. ____ Preferred stockholder dividends are paid before common stockholder dividends.
11. ____ One reason a company might repurchase its own stock is to protect against a hostile takeover.
12. ____ Anyone not a stockholder on the date of declaration of a dividend will not be eligible to participate in that dividend.
13. ____ When referring to dividends, the term “in arrears” refers to the fact that the date of declaration and the date of payment are not the same.
14. ____ A company’s price-earnings ratio can help predict changes in its stock price based on movement in its EPS.
15. ____ One disadvantage of a sole proprietorship or partnership is the risk of liability by the owner.

Multiple Choice

1. Which of the following forms of business is subject to double taxation?
    1. Partnership
    2. Corporation
    3. Sole proprietorship
    4. S corporation
2. Yancey Corporation issues 50,000 shares of common stock for $30 per share. The stock has a par value of $2 per share. By what amount would Yancey credit capital in excess of par?
    1. $1,500,000
    2. $1,400,000
    3. $100,000
    4. $50,000
3. Landon Corporation sold 16,000 shares of $0.50 par value common stock for $17 per share. Which of the following is the journal entry Landon should make?
    1. Figure 16.12

Cash	272,000	
Common Stock		8,000
Capital in Excess of Par Value		264,000

2. Figure 16.13

Cash	272,000	
Common Stock		272,000

3. Figure 16.14

Capital in Excess of Par Value	264,000	
Common Stock		264,000

4. Figure 16.15

Cash	8,000	
Common Stock		8,000

4. Jackson Company is authorized to issue 20,000 shares of $0.50 par value stock. On February 1, it issues 4,000 shares. On April 20, an additional 6,000 shares are issued. On September 23, Jackson repurchases 2,000 shares. On November 3, it reissues half of the shares it repurchased in September. How many outstanding shares does Jackson have on December 31?

    1. 20,000
    2. 10,000
    3. 9,000
    4. 8,000

5. Paul Mitchell purchased a licensing agreement for $40,000 prior to going to work for Traylor Corporation. Traylor agreed to issue 2,000 shares of common stock to Mitchell in exchange for his licensing agreement, which now has a value of $30,000. At the time of the stock exchange, Traylor's $2 par value stock was selling for $14 per share. For what amount should Traylor debit the licensing agreement?

    1. $40,000
    2. $30,000
    3. $28,000
    4. $4,000

6. Kramer Company is authorized to issue 45,000 shares of its 7 percent, $100 par value preferred stock. On March 15, Kramer issues 5,000 shares for $200 per share. On November 1, Kramer declares the dividend and pays it on December 1. What amount of cash was paid to the preferred shareholders?

1. $70,000
2. $315,000
3. $630,000
4. $35,000

7. Portor Corporation is authorized to sell 150,000 shares of its $0.25 par value common stock. It currently has 90,000 shares issued and outstanding. Portor would like to declare a stock dividend and is curious about the effect this will have on retained earnings. Portor's stock has a current market value per share of $26. Portor is trying to decide between a 5 percent stock dividend and a 40 percent stock dividend. Which of the following accurately shows the effect of each on retained earnings?

	5% Stock Dividend	40% Stock Dividend
a.	$117,000	$936,000
b.	$117,000	$9,000
c.	$1,125	$9,000
d.	$1,125	$936,000

8. Falls Church Corporation ended the year with revenues of $45,000 and expenses of $33,000. Its stockholders' equity accounts total $490,000. Which of the following is Falls Church's return on equity for the year?

1. 9.18%
2. 6.73%
3. 73.33%
4. 2.45%

9. Fleming Corporation began and ended the year with 50,000 outstanding shares of common stock net income for the year totaled $480,000. Preferred dividends amounted to $30,000. Which of the following would be Fleming's basic earnings per share?

1. $9.60 per share
2. $16.00 per share
3. $6.00 per share
4. $9.00 per share

10. Which of the following would not force a company to compute diluted earnings per share in addition to basic earnings per share?

1. Convertible preferred stock
2. Stock warrants
3. Nonconvertible preferred stock
4. Stock options

11. Friar Inc. had a net income for 20X5 of $1,870,000. It had 600,000 shares of common stock outstanding on 1/1/X5 and repurchased 150,000 of those shares on 8/31/X5. It has no preferred stock. On 12/31/X5, Friar's stock was selling for $26 per share. Which of the following is Friar's price-earnings ratio on 12/31/X5?

1. 7.65
2. 8.33
3. 6.25
4. 7.00

Problems

1. Cutlass Corporation is authorized to issue 40,000 shares of $1 par value common stock. On March 15, it issues 1,000 shares for $6 per share. Record this transaction for Cutlass.

2. McNair Corporation is authorized to issue 105,000 shares of 5 percent, $200 par value preferred stock. On May 22, McNair issues 32,000 shares for $325 per share. McNair declares the preferred dividend on September 1 and pays it on October 1.

    1. Record the issuance of the preferred stock.
    2. Record the declaration of the dividend on September 1.
    3. Record the payment of the preferred dividend on October 1.

3. Douglas Company's board of directors approves a plan to buy back shares of its common stock. Prepare journal entries for each of the following transactions. Assume that the transactions occur in the order given.

    1. Douglas buys back 2,500 shares of its $1 common stock for $35 per share.
    2. Douglas resells 1,000 shares for $36.
    3. Douglas resells 500 shares for $34.
    4. Douglas resells 600 shares for $33.
    5. Douglas resells the remaining 400 shares for $35.

4. Grayson Corporation is authorized to sell 2,000,000 shares of its $1 par value common stock to the public. Before 20X7, it had issued 60,000 shares with a market value of $12 per share. During 20X7, Grishom issued another 14,000 shares when the market value per share was $24.

    On 1/1/X7, Grishom had retained earnings of $1,950,000. During 20X7, Grishom earned net income of $80,000 and paid dividends to common stockholders of $19,000. Also during 20X7, Grishom repurchased 11,000 shares of its own stock when the market price was $22.

    1. Record the issuance of the common stock during 20X7.
    2. Determine retained earnings on 12/31/X7.
    3. Record the purchase of the treasury stock.
    4. Prepare the stockholders' equity section of the balance sheet on 12/31/X7.

5. In late 20X2, the Pickins Corporation was formed. The articles of incorporation authorize 5,000,000 shares of common stock carrying a $1 par value, and 1,000,000 shares of $5 par value preferred stock. On January 1, 20X3, 2,000,000 shares of common stock are issued for $15 per share. Also on January 1, 500,000 shares of preferred stock are issued at $30 per share.

    1. Prepare journal entries to record these transactions on January 1.

During March 20X3, the Pickins Corporation repurchased 100,000 common shares for the treasury at a price of $13 per share. During August 20X3, all 100,000 treasury shares are reissued at $16 per share.

2. Prepare journal entries to record these transactions.

   During November 20X3, Pickins issues a 25 percent stock dividend on all outstanding shares when its stock was selling for $50 per share. On December 1, 20X3, Pickens declares a $0.75 per share cash dividend on common stock and a $2.00 per share cash dividend on preferred stock. Payment is scheduled for December 20, 20X3, to shareholders of record on December 10, 20X3.

3. Prepare journal entries to record the declaration and payment of these stock and cash dividends.

6. On March 1, St. George Company declares a stock dividend on its $1 par value stock. It had 1,000 shares outstanding and the market value was $13 per share.

   1. What would be the debit to retained earnings for a 10 percent stock dividend?
   2. What would be the debit to retained earnings for a 30 percent stock dividend?

7. Rawlings Company has the following equity accounts at the beginning and end of 20X3:

	1/1/X3	12/31/X3
Preferred Stock, 6%, $100 par value	$2,000,000	$2,000,000
Common Stock, $1 Par Value	$160,000	$200,000
Capital in Excess of Par, Common	$12,000,000	$16,000,000
Retained Earnings	$1,100,000	$1,800,000

   The additional 40,000 shares of common stock were issued on September 1, 20X3. Preferred stock was paid its dividend during the year. Net income for the year was $1,200,000.

   Determine Rawlings' basic EPS on December 31, 20X3.

8. Information on Massaff Corporation's stock accounts follows:

	December 31_____	20X7	20X8
Outstanding shares of:			
	Common stock	300,000	330,000
	Nonconvertible preferred stock	10,000	10,000

   The following additional information is available:

   - On July 1, 20X8, Massaff sold 30,000 additional shares of common stock.
   - Net income for the year ended December 31, 20X8, was $750,000.
   - During 20X8 Massaff paid dividends of $3.00 per share on its nonconvertible preferred stock.

   Compute Massaff's basic earnings per common share for the year ended December 31, 20X8.

9. In several past chapters, we have met Heather Miller, who started her own business, Sew Cool. The financial statements for December are shown below.

Figure 16.16 Sew Cool Financial Statements

Sew Cool
Income Statement
As of December 31, 20X8

Revenue	$4,000
Cost of Goods	(2,000)
Gross Profit	2,000
Other Expenses	(1,665)
Earnings before Interest and Tax	335
Interest Expense	(30)
Earnings before Tax	305
Tax Expense	(107)
Net Income	$198

Figure 16.17

Sew Cool
Stmt. of Retained Earnings
As of December 31, 20X8

Retained Earnings, December 1, 20X8	$500
Net Income	198
Dividends	(158)
Retained Earnings, December 31, 20X8	$540

Figure 16.18

Sew Cool
Balance Sheet
December 31, 20X8

Assets		**Liabilities**	
Current		**Current**	
Cash	$940	Accounts Payable	$900
Accounts Receivable	500	Income Tax Payable	120
Less Allowance for Doubtful Accounts	(20)		
Net Accounts Receivable	480		
Inventory	700		
Total Current Assets	$2,120	Total Current Liabilities	$1,020
Noncurrent		**Noncurrent**	
Equipment	$1,000	Notes Payable	$1,060
		Owners' Equity	
		Capital Stock	$500
		Retained Earnings	540
		Total Owners' Equity	$1,040
		Total Liabilities & Owners' Equity	$3,120
Total Assets	$3,120		

Based on the financial statements determine Sew Cool's return on equity.

Comprehensive Problem

This problem will carry through several chapters, building in difficulty. It allows students to continuously practice skills and knowledge learned in previous chapters.

In Chapter 15 "In Financial Statements, What Information Is Conveyed about Other Noncurrent Liabilities?", you prepared Webworks statements for March. They are included here as a starting point for April.

Here are Webworks financial statements as of March 31.

Figure 16.19 Webworks Financial Statements

Webworks
Income Statement
As of March 31

Revenue	$20,810
Cost of Goods Sold	(12,258)
Gross Profit	8,552
Deprec. and Amort. Expense	(392)
Other Expenses and Losses	(6,413)
Investment Income (Loss)	200
Earnings before Interest and Tax	1,947
Interest Expense	(15)
Earnings before Tax	1,932
Tax Expense	(580)
Net Income	$1,352

Figure 16.20

Webworks
Stmt. of Retained Earnings
As of March 31

Retained Earnings, March 1	$18,249
Net Income	1,352
Retained Earnings, March 31	$19,601

Figure 16.21

Webworks
Balance Sheet
March 31

Assets		**Liabilities**	
Current		**Current**	
Cash	$9,027	Accounts Payable	$2,770
Accounts Receivable	1,600	Salaries Payable	350
Less Allowance for Doubtful Accounts	(160)	Interest Payable	30
Net Accounts Receivable	1,440	Unearned Revenue	300
Trading Securities, Net	1,800		
Merchandise Inventory	2,324		
Supplies Inventory	50		
Total Current Assets	$14,641	Total Current Liabilities	$3,450
Property, Plant, and Equipment		**Noncurrent**	
		Note Payable	$3,000
Equipment	$10,500		
Less Accumulated Depreciation	(1,138)		
Furniture	1,000		
Less Accumulated Depreciation	(102)		
Total P, P, and E	$10,260		
Other Noncurrent Assets		**Owners' Equity**	
Available-for-Sale Securities	$2,275	Capital Stock	$2,000
Licensing Agreement, Net	1,400	Retained Earnings	19,601
		Other Accumulated Comprehensive Income:	
		Unrealized Gain on Available-for-Sale Securities	525
		Total Owners' Equity	$22,126
		Total Liabilities & Owners' Equity	
Total Assets	$28,576		$28,576

The following events occur during April:

a. Webworks starts and completes ten more Web sites and bills clients for $7,000.

b. Leon invites Nancy to invest money in the business. She contributes $2,000 and becomes an equal owner with Leon.

c. Webworks purchases supplies worth $125 on account.

d. At the beginning of April, Webworks had fourteen keyboards costing $120 each and twenty-eight flash drives costing $23 each. Webworks uses periodic FIFO to cost its inventory.

e. On account, Webworks purchases ninety-five keyboards for $121 each and ninety flash drives for $25 each.

f. Webworks sells eighty-seven keyboards for $13,050 and ninety-five of the flash drives for $2,850 cash.

g. Webworks collects $6,400 in accounts receivable.

h. Webworks pays its $500 rent.

i. Webworks pays off $14,000 of its accounts payable.

j. Webworks sells all of its shares of RST stock for $20 per share.

k. Webworks pays Juan $700 for his work during the first three weeks of April.

l. Webworks writes off an account receivable from December in the amount of $150 because collection appears unlikely.

m. Webworks pays off its salaries payable from March.

n. Webworks pays Leon and Nancy a salary of $3,500 each.

o. Webworks completes the design for the photographer for which it was paid in February. The $300 of the unearned revenue should be reclassified to revenue.

p. Webworks pays Nancy and Leon a dividend of $250 each.

q. Webworks pays taxes of $372 in cash.

Required:

A. Prepare journal entries for the above events.

B. Post the journal entries to T-accounts.

C. Prepare an unadjusted trial balance for Webworks for April.

D. Prepare adjusting entries for the following and post them to your T-accounts.

r. Webworks owes Juan $100 for his work during the last week of April.

s. Webworks receives an electric bill for $440. Webworks will pay the bill in May.

t. Webworks determines that it has $65 worth of supplies remaining at the end of April.

u. Webworks is continuing to accrue bad debts at 10 percent of accounts receivable.

v. Webworks continues to depreciate its equipment over five years and its furniture over five years, using the straight-line method.

w. The license agreement should be amortized over its one-year life.

x. QRS Company is selling for $14 per share on April 30.

y. Interest should be accrued for April.

z. Record cost of goods sold.

E. Prepare an adjusted trial balance.

F. Prepare financial statements for April.

Chapter 17: In a Set of Financial Statements, What Information Is Conveyed by the Statement of Cash Flows?

Video Clip

(click to see video)

Joe introduces Chapter 17 “In a Set of Financial Statements, What Information Is Conveyed by the Statement of Cash Flows?” and speaks about the course in general.

17.1 The Structure of a Statement of Cash Flows

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Describe the purpose of a statement of cash flows.
2. Define "cash" and "cash equivalents."
3. Identify the three categories of cash flows used for reporting purposes.
4. Indicate the type of transactions that are reported as operating activities and provide common examples.
5. Indicate the type of transactions that are reported as investing activities and provide common examples.
6. Indicate the type of transactions that are reported as financing activities and provide common examples.

Question: Thus far in this textbook, the balance sheet and the income statement have been studied in comprehensive detail along with the computation of retained earnings. At this point, a student should be able to access a set of financial statements (on the Internet, for example) and understand much of the reported information. Terms such as "FIFO," "accumulated depreciation," "goodwill," "capital stock," "bad debt expense," and the like that might have sounded like a foreign language at the start of this exploration into financial accounting should now have a genuine meaning.

Examination of one last statement is necessary to complete the financial portrait of a reporting entity: the statement of cash flows. This statement was introduced briefly in Chapter 3 "In What Form Is Financial Information Actually Delivered to Decision Makers Such as Investors and Creditors?". Why is it needed by decision makers?
What is the rationale for presenting a statement of cash flows?
Is it required by U.S. GAAP?

Answer: Coverage of the statement of cash flows has been delayed because the figures presented do not come directly from ending T-account balances found in a business's general ledger. Instead, the accounts and amounts shown here are derived from the other financial statements. Thus, an understanding of those statements is a helpful prerequisite for the construction of a statement of cash flows.

The delay in examining the statement of cash flows should not be taken as an indication of its lack of significance. In fact, some decision makers view it as the most important of the financial statements. They are able to see how corporate officials managed to get and then make use of the ultimate asset: cash. The acquisition of other assets, the payment of debts, and the distribution of dividends inevitably leads back to a company's ability to generate sufficient amounts of cash. Consequently, presentation of a statement of cash flows is required by U.S. GAAP for every period in which an income statement is reported.

To reiterate the importance of this information, Michael Dell, founder of Dell Inc., states in his book *Direct from Dell: Strategies That Revolutionized an Industry* (written with Catherine Fredman): "We were always focused on our profit and loss statement. But cash flow was not a regularly discussed topic. It was as if we were driving along, watching only the speedometer, when in fact we were running out of gas" (Dell & Fredman, 1999).

The income statement and the statement of cash flows connect the balance sheets from the beginning of the year to the end. During the course of that time, total reported net assets either increase or decrease as does the entity's cash balance. The individual causes of those changes are explained by means of the income statement and the statement of cash flows.

The purpose of the statement of cash flows is virtually self-evident: it reports the cash receipts (cash inflows) and the cash disbursements (cash outflows) to explain the changes taking place during the year in the cash balance. However, the physical structure of this statement is not self-evident. As illustrated in Chapter 3 "In What Form Is Financial Information Actually Delivered to Decision Makers Such as Investors and Creditors?", all cash flows are classified within three distinct categories. Chapter 17 "In a Set of Financial Statements, What Information Is Conveyed by the Statement of Cash Flows?" is designed to demonstrate the logic of this classification system and the method by which the reported numbers are derived.

Question: Because current assets are listed in order of liquidity, most businesses present "cash and **cash equivalents***" as the first account on their balance sheets. For example, as of December 31, 2008, Ball Corporation reported cash and cash equivalents totaling $127.4 million. The statement of cash flows uses this same terminology as it explains the drop of $24.2 million in Ball's cash and cash equivalents that took place during 2008. What constitutes cash and what are cash equivalents?*

Answer: Cash consists of coins, currencies, bank deposits (both checking accounts and savings accounts) and some negotiable instruments (money orders, checks, and bank drafts). Cash equivalents are short-term, highly liquid investments that are readily convertible into known amounts of cash. They are so near their maturity date that significant changes in value are unlikely. Only securities with original maturities of ninety days or fewer are eligible to be classified as cash equivalents. Cash equivalents held by most companies usually include Treasury bills[1], commercial paper[2], and money market funds.

Going forward, FASB is considering the elimination of the cash equivalents category. Any of these items other than cash will then appear in the financial statements as temporary investments. For simplicity purposes, cash will be used in the examples presented throughout this chapter. However, until the authoritative rules are changed, the accounting for cash equivalents is the same as that for cash.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093012.html

Question: For reporting purposes all cash flows are classified within one of three categories: operating activities, investing activities, and financing activities. What transactions are specifically identified as operating activities?

Answer: **Operating activities** generally involve producing and delivering goods and providing services. These events are those that transpire on virtually a daily basis as a result of the organization's primary function. For a business like Borders, operating activities include the buying and selling of books (and other inventory items) as well as the multitude of other tasks required by that company's retail function. In simple terms, operating activities are those that are expected to take place regularly in the normal course of business.

Figure 17.1 Typical Operating Activity Cash Inflows and Outflows

Cash Inflows	Cash Outflows
Receipts from the Sale of Goods or Services	Payments for Inventory Payments to Employees Payments for Taxes Payments for Rents, Insurance, Advertising, and the Like

The net number (the inflows compared to the outflows) is presented as the cash flows generated from operating activities. This figure is viewed as a good measure of a company's ability to prosper. Analysts obviously prefer to see a positive number, one that increases from year to year. Some decision makers believe that this figure is a better reflection of a company's financial health than reported net income because the ultimate goal of a business is to generate cash.

For example, International Paper reported a net loss on its income statement for the year ended December 31, 2008, of $1,282 million (considerably worse than any of the previous five years). However, its statement of cash flows for the same period reported a net cash inflow from operating activities of $2,669 million (considerably better than any of the previous five years). No one could blame a decision maker for being puzzled. Did the company do poorly during 2008 or wonderfully well? That is the problem with relying on only a few of the numbers in a set of financial statements without a closer and more complete inspection. What caused this company to lose over $1.2 billion dollars? How did the company still manage to generate nearly $2.7 billion in cash from its operating activities? In-depth analysis of financial statements is never quick and easy. It requires patience and knowledge and the willingness to dig through all the available information.

Question: On the statement of cash flows for the year ended August 31, 2008, Walgreen Co. reported that a net of over $2.8 billion in cash was spent in connection with a variety of investing activities. This company's management obviously made decisions that required considerable sums of money. Details about those expenditures should be of interest to virtually any party analyzing this company. What cash transactions are specifically included in investing activities?

Answer: **Investing activities** encompass the acquisition and disposition of assets in transactions that are separate from the central activity of the reporting organization. These exchanges do not occur daily.

- For a delicatessen, the purchase of bread or onions is an operating activity but the acquisition of a refrigerator or stove is an investing activity.
- For a pharmacy, the sale of aspirin or penicillin is an operating activity but the disposal of a delivery vehicle or cash register is an investing activity.

All of these cash transactions involve assets but, if classified as an investing activity, they are only tangentially related to the day-to-day operation of the business.

Figure 17.2 Walgreen Statement of Cash Flows Shows Four Investing Activity Cash Flows for the Year Ended August 31, 2008

Additions to Property and Equipment	($2,225) million
Proceeds from Sale of Assets	17 million
Business and Intangible Asset Acquisition Net of Cash Received	(620) million
Net Proceeds from Corporate-Owned Life Insurance Policies	10 million

Healthy, growing companies normally expect cash flows from investing activities to be negative (a net outflow) as money is invested by management especially in new noncurrent assets. As can be seen here, Walgreen's spent over $2.2 billion in cash during this one year to buy property and equipment. The company apparently had sufficient cash available to fund this type of significant expansion.

Question: The third category of cash flows lists the amounts received and disbursed in financing activities. For the year ended June 28, 2008, Sara Lee Corporation reported that cash had been reduced by over $1.8 billion as a result of its financing activities. Again, that is a lot of money leaving the company. What cash transactions are specifically identified as financing activities?

Answer: **Financing activities** relate primarily to liabilities and shareholders' equity in transactions that are separate from the central, day-to-day activities of the organization. Cash inflows from financing activities usually include issuing capital stock or incurring liabilities such as bonds or notes payable. Outflows are created by the distribution of dividends, the acquisition of treasury stock, the payment of noncurrent liabilities, and the like.

Sara Lee reported five financing activity cash flows for the year ended June 28, 2008. As can be seen in the specific information provided on its statement of cash flows, this company spent nearly $1.5 billion to repay liabilities, another $315 million to repurchase its own stock, and $296 million as dividend payments. Significant information that is readily apparent on this statement.

Figure 17.3 Sara Lee Statement of Cash Flows Shows Five Financing Activity Cash Flows for the Year Ended June 28, 2008

Issuances of Common Stock	$5 million
Purchases of Common Stock	(315 million)
Repayments of Long-Term Debt	(1,456 million)
Borrowings (repayments) of Short-Term Debt, Net	251 million
Payment of Dividends	(296 million)

The net result reported for financing activities is frequently positive in some years and negative in others. When a company borrows money or sells capital stock, an overall positive inflow of cash is likely. In years when a large dividend is paid or debt is settled, the net figure for financing activities is more likely to be negative.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093015.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093017.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092974.html

Question: Significant investing and financing transactions occasionally occur without a cash component. Land, for example, might be obtained by issuing common stock. Buildings are often bought through the signing of a long-term note payable so that cash payments are deferred into the future. Should that information be omitted from the statement of cash flows?
If no cash is received or expended, should a transaction be reported on a statement of cash flows?

Answer: All investing and financing transactions need to be reported in some manner for the benefit of decision makers. They represent choices made by the organization's management. If cash is not involved, such events must still be disclosed in a separate schedule (often just below the statement of cash flows) or explained in the notes to the financial statements. This information is valuable to interested parties who want a complete picture of the decisions made during the reporting period.

For example, in a note to its financial statements for the year ended April 24, 2009, NetApp Inc. disclosed the

“acquisition of property and equipment on account” of $13,152,000. Although a noncash transaction, inclusion of the information was still important.

Stock dividends and stock splits, though, are omitted entirely in creating a statement of cash flows. As discussed in the previous chapter, they are viewed as merely techniques to reduce the price of a corporation’s stock and are not decisions that impact the allocation of resources.

Key Takeaway

A statement of cash flows is required by U.S. GAAP whenever an income statement is presented. It explains the changes occurring in cash and cash equivalents during the reporting period. All the various cash inflows and outflows are classified into one of three categories. Operating activities result from the primary or central function of the business. Investing activities are nonoperating and affect an asset (such as the acquisition of a truck or the sale of a patent). Financing activities are nonoperating and involve a liability or a stockholders’ equity account (borrowing money on a note, for example, or the acquisition of treasury stock). Investing and financing activities that do not impact cash must still be disclosed.

[1]A Treasury bill is a popular U.S. government security with a maturity date of one year or less.

[2]The term “commercial paper” refers to securities issued by corporations to solve their short-term cash needs.

References

Dell, M. with Catherine Fredman, *Direct from Dell: Strategies That Revolutionized an Industry* (New York: HarperBusiness, 1999), 47.

17.2 Cash Flows from Operating Activities: The Direct Method

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Identify the two methods available for reporting cash flows from operating activities.
2. Indicate the method of reporting cash flows from operating activities that is preferred by FASB as well as the one that is most commonly used.
3. List the steps to be followed in determining cash flows from operating activities.
4. List the income statement accounts that are removed entirely in computing cash flows from operating activities and explain that procedure when the direct method is applied.
5. Identify common "connector accounts" that are used to convert accrual accounting figures to the change taking place in the cash balance as a result of these transactions.
6. Compute the cash inflows and outflows from common revenues and expenses such as sales, cost of goods sold, rent expense, salary expense, and the like.

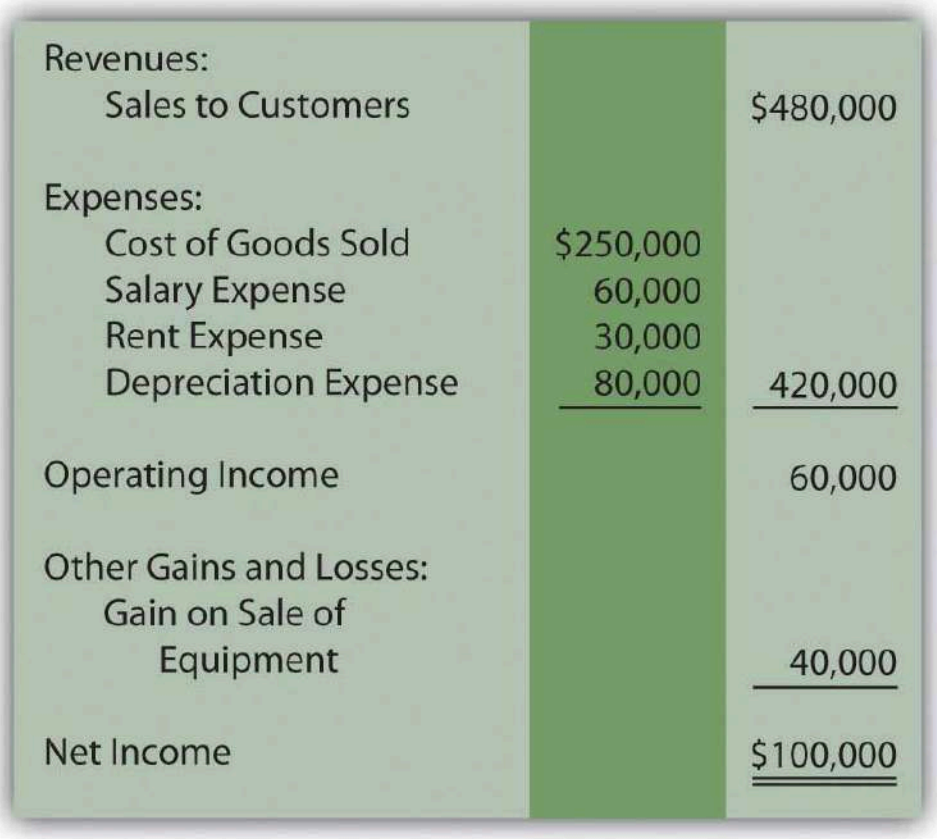
Question: The net cash inflow or outflow generated by operating activities is especially significant information to any person looking at an organization's financial health and future prospects. According to FASB, that information can be presented within the statement of cash flows by either of two approaches: the **direct method** *or the* **indirect method**. *The numerical amount of the change in cash resulting from the company's daily operations is not impacted by this reporting choice. The increase or decrease in cash is a fact that will not vary based on the manner of presentation. Both methods arrive at the same total. The informational value to decision makers, though, is potentially affected by the approach selected.*

FASB has indicated a preference for the direct method. In contrast, reporting companies (by an extremely wide margin) have continued to use the more traditional indirect method. Thus, both will be demonstrated here. The direct method seems a bit easier to explain and will be discussed first. How is information presented when the direct method is selected to disclose a company's cash flows from operating activities?

Answer: The direct method starts with the income statement for the period. Then, each of the separate figures is converted into the amount of cash received or spent in carrying on operating activities. "Sales," for example, is turned into "cash collected from customers." "Salary expense" and "rent expense" are recomputed as "cash paid to employees" and "cash paid to rent facilities."

For illustration purposes, assume that that Liberto Company prepared the following income statement for the year ended December 31, Year One. This statement has been kept rather simple so that the conversion to cash flows from operating activities is not unnecessarily complex. For example, income tax expense has been omitted.

Figure 17.4 Liberto Company Income Statement Year Ended December 31, Year One



Revenues:		
Sales to Customers		$480,000
Expenses:		
Cost of Goods Sold	$250,000	
Salary Expense	60,000	
Rent Expense	30,000	
Depreciation Expense	80,000	420,000
Operating Income		60,000
Other Gains and Losses:		
Gain on Sale of Equipment		40,000
Net Income		$100,000

The $100,000 net income figure reported here by Liberto is based on the application of U.S. GAAP. However, the amount of cash generated by the company's operating activities might be considerably more or much less than that income figure. It is a different piece of information.

To transform a company's income statement into its cash flows from operating activities, three distinct steps must be taken. The first step is the complete elimination of any income statement account that does not involve cash. Although such balances are important in arriving at net income, they are not relevant to the cash generated and spent in connection with operations. By far the most obvious example is depreciation. This expense appears on virtually all income statements but has no purpose when cash flows are being determined. It is omitted because depreciation is neither a source nor use of cash. It is an allocation of a historical cost to expense over an asset's useful life. For Liberto, the $80,000 depreciation expense is removed to begin the process of arriving at cash flows from operating activities.

The second step is the removal of any gains and losses that have resulted from investing or financing activities. Although cash was probably involved, this inflow or outflow is reported elsewhere in the statement of cash flows and not within the company's operating activities. For example, Liberto's $40,000 gain on the sale of equipment is germane to the reporting of investing activities, not operating activities. The cash received in this disposal is included on the statement of cash flows but as an investing activity.

Neither noncash items such as depreciation nor nonoperating gains and losses are included when an income statement is converted to the cash flows from operating activities.

Question: After these two balances are deleted, Liberto is left with four income statement accounts:

1. *Sales to customers—$480,000*
2. *Cost of goods sold—$250,000*
3. *Salary expense—$60,000*
4. *Rent expense—$30,000*

These balances all relate to operating activities. However, the numbers reflect the application of U.S. GAAP and accrual accounting rather than the amount of cash exchanged. The cash effects must be determined individually for these accounts. How are income statement figures such as sales or rent expense converted into the amount of cash received or expended?

Answer: For all the remaining income statement accounts, a difference usually exists between the time of recognition as specified by accrual accounting and the exchange of cash. A sale is made on Monday (revenue is recognized) but the money is not collected until Friday. An employee performs work on Monday (expense is recognized) but payment is not made until Friday.

These timing differences occur because accrual accounting is required by U.S. GAAP. Thus, many revenues and expenses are not recorded at the same time as the related cash transactions. In the interim, recognition of an asset or liability balance is necessary. Between the sale on Monday and the collection on Friday, the business reports an account receivable. This asset goes up when the sale is made and down when the cash is collected. Between the employee's work on Monday and the payment on Friday, the business reports a salary payable. This liability goes up when the money is earned and down when the cash payment is made. In this textbook, these interim accounts (such as accounts receivable and salary payable) will be referred to as "connector accounts" because they connect the accrual recording with the cash transaction.

Each income statement account (other than the noncash and nonoperating numbers that have already been eliminated) has at least one asset or liability that is recorded between the time of accounting recognition and the exchange of cash. The changes in these connector accounts are used to convert the individual income statement figures to their cash equivalents. Basically, the increase or decrease is removed to revert the reported number back to the amount of cash involved.

Connector accounts are mostly receivables, payables, and prepaid expenses. For example, see Figure 17.5 "Common Connector Accounts for Liberto's Four Income Statement Balances".

Figure 17.5 Common Connector Accounts for Liberto's Four Income Statement Balances[1]

Income Statement Account	Balance Sheet Connector Account
Sales to Customers	Accounts Receivable
Cost of Goods Sold	Inventory and Accounts Payable
Salary Expense	Salary Payable
Rent Expense	Prepaid Rent and Rent Payable

If a connector account is an asset and the balance goes up, the business has less cash (the receivable was not collected, for example). If a connector account is an asset and it goes down, the business has more cash (receivables from previous years were collected in the current period). For a connector account that is an asset, an inverse relationship exists between the change in the balance during the year and the reporting entity's cash balance.

- Increase in connector account that is an asset → Lower cash balance
- Decrease in connector account that is an asset → Higher cash balance

If a connector account is a liability and the balance goes up, the business has saved its cash and holds more (an expense has been incurred but not yet paid, for example). If a connector account is a liability and this balance falls, the business must have used cash to reduce the debt and has less remaining. Consequently, a direct relationship exists between the change in a connector account that is a liability and the cash balance.

- Increase in connector account that is a liability → Higher cash balance
- Decrease in connector account that is a liability → Lower cash balance

Question: Liberto has one revenue and three expenses left on its income statement. To arrive at the net cash flows from operating activities, the cash inflow or outflow relating to each must be determined. Assume that the following changes took place during this year in the related connector accounts:

- *Accounts receivable: up $19,000*
- *Inventory: down $12,000*
- *Prepaid rent: up $4,000*
- *Accounts payable: up $9,000*
- *Salary payable: down $5,000*

In applying the direct method to determine operating activity cash flows, how are the individual figures to be disclosed computed?

Answer:

- Sales to customers were reported on the income statement as $480,000. During that same period,

accounts receivable increased by $19,000. Less money was collected than the amount of credit sales. That is what causes a rise in receivables. Consequently, the cash received from customers was only $461,000 ($480,000 less $19,000).

- Salary expense was reported as $60,000. For that time period, salary payable went down by $5,000. More cash must have been paid to cause this drop in the liability. The amount actually paid to employees was $65,000 ($60,000 plus $5,000).
- Rent expense was reported as $30,000. Prepaid rent increased by $4,000 from the first of the year to the end. This connector account is an asset. Because the asset increased, Liberto must have paid an extra amount for rent. Cash paid for rent was $34,000 ($30,000 plus $4,000).
- Cost of goods sold has been left to last because it requires an extra step. The company first determines the quantity of inventory bought this period. Only then can the cash payment made for those acquisitions be determined.
    - Here, cost of goods sold was reported as $250,000. However, the balance held in inventory fell by $12,000. Thus, the company bought $12,000 less inventory than it sold. Fewer purchases cause a drop in inventory. The amount of inventory acquired during the period was only $238,000 ($250,000 less $12,000).
    - Next, the cash paid for those purchases is calculated. As indicated by the information provided, accounts payable went up $9,000. Liabilities increase because less money is paid. Although $238,000 of merchandise was acquired, only $229,000 in cash payments were made ($238,000 less $9,000).

Figure 17.6 Liberto Company Statement of Cash Flows for Year One, Operating Activities Reported by Direct Method

Cash Collected from Customers	$461,000
Cash Paid to Acquire Inventory	(229,000)
Cash Paid to Employees	(65,000
Cash Paid for Rent	(34,000)
Cash Generated by Operating Activities	$133,000

Liberto’s income statement reported net income of $100,000. However, the cash generated by operating activities during this same period was $133,000. The conversion from accrual accounting to operating cash inflows and outflows required three steps.

1. Noncash revenues and expenses (depreciation, in this example) were removed. These accounts do not represent cash transactions.
2. Nonoperating gains and losses (the gain on sale of equipment, in this example) were removed. These accounts reflect investing and financing activities and the resulting cash flows are reported in those sections rather than within the operating activities.
3. The change in each related connector account during the period is used to adjust the remaining income statement figures to the amount of cash physically exchanged. Accrual accounting figures are converted to cash balances.

Exercise

Links to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093018.html

Exercise

Links to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092993.html

Exercise

Links to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092995.html

Exercise

Links to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092975.html

Key Takeaway

An entity's cash flows from operating activities can be derived and reported by either the direct method or the indirect method. FASB expressed preference for the direct method but the indirect method is used by most businesses in the United States. The process begins with the income for the period (the entire income statement for the direct method but just net income for the indirect method). Noncash items and nonoperating gains and losses are eliminated entirely. In the direct method, the remaining revenue and expense accounts are individually converted into cash figures. For each, the change in one or more related balance sheet connector accounts is taken into consideration. Thus, the reported U.S. GAAP (accrual accounting) figures can be turned into the underlying cash inflows and outflows for reporting purposes.

[1]For convenience, the allowance for doubtful accounts will not be included with accounts receivable. The possibility of bad debts makes the conversion to cash more complicated and is covered in upper-level accounting textbooks.

17.3 Cash Flows from Operating Activities: The Indirect Method

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Explain the difference in the start of the operating activities section of the statement of cash flows when the indirect method is used rather than the direct method.
2. Demonstrate the removal of noncash items and nonoperating gains and losses in the application of the indirect method.
3. Determine the effect caused by the change in the various connector accounts when the indirect method is used to present cash flows from operating activities.
4. Identify the reporting classification for interest revenues, dividend revenues, and interest expense in creating a statement of cash flows and describe the controversy that resulted from this handling.

Question: As mentioned, most organizations do not choose to present their operating activity cash flows using the direct method despite preference by FASB. Instead, this information is shown within a statement of cash flows by means of the indirect method. How does the indirect method of reporting operating activity cash flows differ from the direct method?

Answer: The indirect method actually follows the same set of procedures as the direct method except that it begins with net income rather than the business's entire income statement. After that, the three steps demonstrated previously are followed although the mechanical process here is different.

1. Noncash items are removed.
2. Nonoperational gains and losses are removed.
3. Adjustments are made, based on the change registered in the various connector accounts, to switch remaining revenues and expenses from accrual accounting to cash accounting.

Question: In the income statement presented above for the Liberto Company, net income was reported as $100,000. That included depreciation expense (a noncash item) of $80,000 and a gain on the sale of equipment (an investing activity rather than an operating activity) of $40,000. In applying the indirect method, how are noncash items and nonoperating gains and losses removed from net income?

Answer: Depreciation is an expense and, hence, a negative component of net income. To eliminate a negative, it

is offset by a positive. Adding back depreciation serves to remove its impact from the reporting company's net income.

The gain on sale of equipment also exists within reported income but as a positive figure. It helped increase profits this period. To eliminate this gain, the $40,000 amount must be subtracted. The cash flows resulting from this transaction came from an investing activity and not an operating activity.

In applying the indirect method, a negative is removed by addition; a positive is removed by subtraction.

Figure 17.7 Operating Activity Cash Flows, Indirect Method—Elimination of Noncash and Nonoperating Balances

In the direct method, these two amounts were simply omitted in arriving at the individual cash flows from operating activities. In the indirect method, they are both physically removed from income by reversing their effect. The impact is the same in the indirect method as in the direct method.

Question: After all noncash and nonoperating items are removed from net income, only the changes in the balance sheet connector accounts must be utilized to complete the conversion to cash. For Liberto, those balances were shown previously.

- *Accounts receivable: up $19,000*
- *Inventory: down $12,000*
- *Prepaid rent: up $4,000*
- *Accounts payable: up $9,000*
- *Salary payable: down $5,000*

Each of these increases and decreases was used in the direct method to turn accrual accounting figures into cash balances. That same process is followed in the indirect method. How are changes in an entity's connector accounts reflected in the application of the indirect method?

Answer: Although the procedures appear to be different, the same logic is applied in the indirect method as in the direct method. The change in each of these connector accounts has an impact on the cash amount and it can be logically determined. However, note that the effect is measured on the net income as a whole rather than on individual revenue and expense accounts.

Accounts receivable increased by $19,000. This rise in the receivable balance shows that less money was collected than the sales made during the period. Receivables go up because customers are slow to pay. This change results

in a lower cash balance. Thus, the $19,000 should be subtracted in arriving at the cash flow amount generated by operating activities. The cash received was actually less than the figure reported for sales within net income. *Subtract $19,000*.

Inventory decreased by $12,000. A drop in the amount of inventory on hand indicates that less was purchased during the period. Buying less merchandise requires a smaller amount of cash to be paid. That leaves the balance higher. The $12,000 should be added. *Add $12,000*.

Prepaid rent increased by $4,000. An increase in any prepaid expense shows that more of the asset was acquired during the year than was consumed. This additional purchase requires the use of cash; thus, the balance is lowered. The increase in prepaid rent necessitates a $4,000 subtraction in the operating activity cash flow computation. *Subtract $4,000*.

Accounts payable increased by $9,000. Any jump in a liability means that Liberto paid less cash during the period than the debts that were incurred. Postponing liability payments is a common method for saving cash and keeping the reported balance high. The $9,000 should be added. *Add $9,000*.

Salary payable decreased by $5,000. Liability balances fall when additional payments are made. Those cash transactions are reflected in applying the indirect method by a $5,000 subtraction. *Subtract $5,000*.

Therefore, if Liberto Company uses the indirect method to report its cash flows from operating activities, the information will take the following form.

Figure 17.8 Liberto Company Statement of Cash Flows for Year One, Operating Activities Reported by Indirect Method

Net Income	$100,000
Eliminate:	
Depreciation Expense	+80,000
Gain on Sale of Equipment	(40,000)
Adjust Revenues and Expenses from Accrual Accounting to Cash:	
Increase in Accounts Receivable	(19,000)
Decrease in Inventory	+12,000
Increase in Prepaid Rent	(4,000)
Increase in Accounts Payable	+9,000
Decrease in Salary Payable	(5,000)
Cash Generated by Operating Activities	$133,000

As with the direct method, the final total is a net cash inflow of $133,000. In both cases, the starting spot was net income (either as a single number or the income statement as a whole). Then, any noncash items were removed as well as nonoperating gains and losses. Finally, the changes in the connector accounts that bridge the time period between U.S. GAAP recognition and the cash exchange are determined and included so that only cash from operating activities remains. The actual cash increase or decrease is not affected by the presentation of this information.

In reporting operating activity cash flows by means of the indirect method, the following pattern exists.

- A change in a connector account that is an asset is reflected on the statement in the opposite fashion. As shown above, increases in both accounts receivable and prepaid rent are subtracted; a decrease in inventory is added.
- A change in a connector account that is a liability is included on the statement as an identical change. An increase in accounts payable is added whereas a decrease in salary payable is subtracted.

A quick visual comparison of the direct method and the indirect method can make the two appear almost completely unrelated. However, when analyzed, the same steps are incorporated in each. They both begin with the income for the period. Noncash items and nonoperating gains and losses are removed. Changes in the connector accounts for the period are factored in so that only the cash from operations remains.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092976.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2092977.html

Question: When reporting cash flows from operating activities for the year ended December 31, 2008, EMC Corporation listed an inflow of over $240 million labeled as "dividends and interest received" as well as an outflow of nearly $74 million shown as "interest paid."

Unless a company is a bank or financing institution, dividend and interest revenues do not appear to relate to its central operating function. For most businesses, these inflows are fundamentally different from the normal sale of goods and services. Monetary amounts collected as dividends and interest resemble investing activity cash inflows because they are usually generated from noncurrent assets. Similarly, interest expense is an expenditure normally associated with noncurrent liabilities rather than resulting from daily operations. It could be argued that it is a financing activity cash outflow.

Why is the cash collected as dividends and interest and the cash paid as interest reported within operating activities on a statement of cash flows rather than investing activities and financing activities?

Answer: Authoritative pronouncements that create U.S. GAAP are the subject of years of intense study, discussion, and debate. In this process, controversies often arise. When FASB Statement 95, *Statement of Cash Flows*, was issued in 1987, three of the seven board members voted against its passage. Their opposition, at least in part, came from the handling of interest and dividends. On page ten of that standard, they argue "that interest and dividends received are returns on investments in debt and equity securities that should be classified as cash inflows from investing activities. They believe that interest paid is a cost of obtaining financial resources that should be classified as a cash outflow for financing activities."

The other board members were not convinced. Thus, inclusion of dividends collected, interest collected, and interest paid within an entity's operating activities became a part of U.S. GAAP. Such disagreements arise frequently in the creation of official accounting rules.

The majority of the board apparently felt that—because these transactions occur on a regular ongoing basis—a better portrait of the organization's cash flows is provided by including them within operating activities. At every juncture of financial accounting, multiple possibilities for reporting exist. Rarely is complete consensus ever achieved as to the most appropriate method of presenting financial information.

Talking with an Independent Auditor about International Financial Reporting Standards (Continued)

Following is the conclusion of our interview with Robert A. Vallejo, partner with the accounting firm PricewaterhouseCoopers.

Question: Any company that follows U.S. GAAP and issues an income statement must also present a statement of cash flows. Cash flows are classified as resulting from operating activities, investing activities, or financing activities. Are IFRS rules the same for the statement of cash flows as those found in U.S. GAAP?

Rob Vallejo: Differences do exist between the two frameworks for the presentation of the statement of cash flows, but they are relatively minor. Probably the most obvious issue involves the reporting of interest and dividends that are received and paid. Under IFRS, interest and dividend collections may be classified as either operating or investing cash flows whereas, in U.S. GAAP, they are both required to be shown within operating activities. A similar difference exists for interest and dividends payments. These cash outflows can be classified as either operating or financing activities according to IFRS. For U.S. GAAP, interest payments are viewed as operating activities whereas dividend payments are considered financing activities. As is common in much of IFRS, more flexibility is available.

Key Takeaway

Most reporting entities use the indirect method to report cash flows from operating activities. This presentation begins with net income and then eliminates any noncash items (such as depreciation expense) as well as nonoperating gains and losses. Their impact on net income is reversed to create this removal. The changes in balance sheet connector accounts for the year (such as accounts receivables, inventory, accounts payable, and salary payable) must also be taken into consideration in converting from accrual accounting to cash. An analysis is made of the effect on both cash and net income in order to make the proper adjustments. Cash transactions that result from interest revenue, dividend revenue, and interest expense are all left within operating activities because they happen regularly. However, some argue that interest and dividend collections are really derived from investing activities and interest payments relate to financing activities.

17.4 Cash Flows from Investing and Financing Activities

Learning Objectives

At the end of this section, students should be able to meet the following objectives:

1. Analyze the changes in nonoperational assets to determine cash inflows and outflows from investing activities.
2. Analyze the changes in nonoperational liabilities and stockholders' equity accounts to determine cash inflows and outflows from financing activities.
3. Recreate journal entries to measure the effect on ledger accounts where several cash transactions have occurred.

Question: For the year ended September 27, 2008, The Walt Disney Company reported the net outflow of over $2.1 billion in cash as a result of its investing activities during that period (all numbers in millions):

Figure 17.9 The Walt Disney Company Investing Activity Cash Flows for Year Ended September 27, 2008

Investments in Parks, Resorts, and Other Property	($1,578)
Sales of Investments	70
Proceeds from Sales of Equity Investments and Businesses	14
Acquisitions	(660)
Proceeds from Sales of Fixed Assets and Other	(8)
Cash Used in Continuing Investing Activities	($2,162)

This portion of Disney's statement of cash flows shows that a number of nonoperating asset transactions created this $2.1 billion reduction in cash. Information about management decisions is readily available. For example, a potential investor can see that officials chose to spend cash of almost $1.6 billion during this year in connection with Disney's parks, resorts and other property. Interestingly, this expenditure level is almost exactly the same as the monetary amount invested in those assets in the previous year. With knowledge of financial accounting, a portrait of a business and its activities begins to become clear.

After the cash amounts are determined, conveyance of this information does not appear particularly complicated. How does a company arrive at the investing activity figures that are disclosed within the statement of cash flows?

Answer: In most cases, an accountant takes the ledger account for each nonoperating asset (land, buildings, equipment, patents, trademarks, and the like) and investigates the individual transactions that took place during the year. The amount of every cash change is identified and reported. A cash sale of land creates an inflow whereas the acquisition of a building probably requires the payment of some cash.

The difficulty in this process can come from having to sort through multiple purchases and sales to compute the exact amount of cash involved in each transaction. At times, determining these cash effects resembles the work required to solve a puzzle with many connecting pieces. Often, the accountant must replicate the journal entries that were made originally. Even then, the cash portion of these transactions may have to be determined by mathematical logic. To illustrate, assume that a company reports the following account balances.

Figure 17.10 Account Balances for Illustration Purposes

	January 1, Year One	December 31, Year One
Balance Sheet:		
Equipment	$730,000	$967,000
Accumulated Depreciation	300,000	450,000
Income Statement:		
Depreciation Expense		230,000
Gain on Sale of Equipment		74,000

In looking through business records for Year One, assume that the accountant finds two additional pieces of information about the above accounts:

- Equipment costing $600,000 was sold this year for cash.
- Other equipment was acquired, also for cash.

Sale of equipment. This transaction is analyzed first because the cost of the equipment is already provided. However, the accumulated depreciation relating to the disposed asset is not known. The accountant must study the available data to determine that missing number because that balance is also removed when the asset is sold.

Accumulated depreciation at the start of the year was $300,000 but depreciation expense of $230,000 was then reported as shown above. This expense was recognized through the following year-end adjustment.

Figure 17.11 Assumed Adjusting Entry for Depreciation

Depreciation Expense	230,000	
Accumulated Depreciation		230,000

The entry here increases the accumulated depreciation account to $530,000 ($300,000 plus $230,000). However, the end balance is not $530,000 but only $450,000. What caused the $80,000 drop in this contra asset account?

Accumulated depreciation represents the cost of a long-lived asset that has already been expensed. Virtually the only situation in which accumulated depreciation is reduced is the disposal of the related asset. Here, the accountant knows that equipment was sold. Although the amount of accumulated depreciation relating to that asset is unknown, the assumption can be made that it is equal to this reduction of $80,000. No other possible decrease in accumulated depreciation is mentioned.

Thus, the accountant believes equipment costing $600,000 but with accumulated depreciation of $80,000 (and, hence, a net book value of $520,000) was sold for an amount resulting in the $74,000 gain that is shown in the reported figures presented above.

A hypothetical journal entry can be constructed from this information.

Figure 17.12 Assumed Journal Entry for Sale of Equipment

Cash	???	
Accumulated Depreciation	80,000	
Equipment		600,000
Gain on Sale of Equipment		74,000

This journal entry only balances if the cash received is $594,000. Equipment with a book value of $520,000 was sold during the year at a reported gain of $74,000. Apparently, $594,000 was received. How does all of this information affect the statement of cash flows?

- A cash inflow of $594,000 is reported within investing activities with a labeling such as cash received from sale of equipment.
- Depreciation of $230,000 is eliminated from net income in computing cash flows from operating activities because this expense had no impact on cash flows.
- The $74,000 gain on sale of equipment is also eliminated from net income but because it does not relate to an operating activity. The $594,000 in cash collected is shown but as an inflow from an investing activity.

Purchase of equipment. According to the information provided, another asset was acquired this year but its cost is unavailable. Once again, the accountant must puzzle out the amount of cash involved in the transaction.

The equipment account began the year with a $730,000 balance. The sale of equipment costing $600,000 was just discussed. This transaction should have dropped the ledger account total to $130,000 ($730,000 less $600,000). However, at the end of the period, the balance reported for this asset is actually $967,000. How does the cost of equipment grow from $130,000 to $967,000? If no other transaction is mentioned, the most reasonable explanation is that equipment was acquired at a cost of $837,000 ($967,000 less $130,000). Unless information is available indicating that part of this purchase was made on credit, the journal entry that was recorded originally must have been as follows.

Figure 17.13 Assumed Journal Entry for Purchase of Equipment

Equipment	837,000	
Cash		837,000

At this point, the changes in all related accounts (equipment, accumulated depreciation, depreciation expense, and gain on sale of equipment) have been utilized to determine the two transactions for the period and the cash inflows and outflows. In the statement of cash flows for this company, the investing activities are listed as follows.

Figure 17.14 Statement of Cash Flows Investing Activities

Sold Equipment	$594,000
Purchased Equipment	(837,000)
Net Cash Outflow—Investing Activities	($243,000)

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093020.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093022.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093000.html

Question: For the year ended December 28, 2008, Johnson & Johnson reported a net cash outflow from financing activities of over $7.4 billion. Within its statement of cash flows, that total was broken down into seven specific categories (all numbers in millions).

Figure 17.15 Financing Activity Cash Flows Reported by Johnson & Johnson for Year Ended December 28, 2008

Dividends to Shareholders	($5,024)
Repurchase of Common Stock	(6,651)
Proceeds from Short-Term Debt	8,430
Retirement of Short-Term Debt	(7,319)
Proceeds from Long-Term Debt	1,638
Retirement of Long-Term Debt	(24)
Proceeds from the Exercise of Stock Options/Excess Tax Benefits	1,486
Net Cash Used by Financing Activities	($7,464)

In preparing a statement of cash flows, how does a company such as Johnson & Johnson determine the amounts that were paid and received as a result of its various financing activities?

Answer: As has been indicated, financing activities reflect transactions that are not part of a company's central

operations and involve either a liability or a stockholders' equity account. Johnson & Johnson paid over $5 billion in cash dividends and nearly $6.7 billion to repurchase common stock (treasury shares). During the same period, approximately $8.4 billion in cash was received from borrowing money on short-term debt and another $1.6 billion from long-term debt. None of these amounts are directly associated with the company's operating activities. However, they do involve liabilities or stockholders' equity and are appropriately reported as financing activities.

The procedures used in determining cash amounts to be reported as financing activities are the same as demonstrated for investing activities. The change in each nonoperating liability and stockholders' equity account is analyzed. The recording of individual transactions can be replicated so that the cash effect is isolated.

To illustrate, various account balances for the Hastings Corporation are presented in the following schedule.

Figure 17.16 Account Balances for Illustration Purposes

	January 1, Year One	December 31, Year One
Balance Sheet:		
Note Payable	$680,000	$876,000
Treasury Stock	(400,000)	(300,000)
Capital in Excess of Cost	120,000	160,000
Retained Earnings	454,000	619,000
Income Statement:		
Loss on Early Extinguishment of Debt		25,000
Net Income		200,000

In examining records for the Hastings Corporation for this year, the accountant finds several additional pieces of information:

1. Cash of $400,000 was borrowed by signing a note payable with a local bank.
2. Another note payable was paid off prior to its maturity date because of a drop in interest rates.
3. Treasury stock was sold to the public for cash.
4. A cash dividend was declared and distributed.

Once again, the various changes in each account balance can be analyzed to determine the cash flows, this time to be reported as financing activities.

Borrowing on note payable. Complete information about this transaction is available. Hastings Corporation received $400,000 in cash by signing a note payable with a bank. The journal entry to record the incurrence of this liability is assumed to be as follows.

Figure 17.17 Assumed Journal Entry for Signing of Note Payable

Cash	400,000	
Note Payable		400,000

On a statement of cash flows, this transaction is listed within the financing activities as a $400,000 cash inflow.

Paying note payable. Incurring the above $400,000 debt raises the note payable balance from $680,000 to $1,080,000. By the end of the year, this account only shows a total of $876,000. Reported notes payable have decreased in some way by $204,000 ($1,080,000 less $876,000). The information gathered by the accountant indicates that a debt was paid off this year prior to maturity. In addition, the general ledger reports a $25,000 loss on the early extinguishment of a debt. Once again, the journal entry for this transaction can be recreated by logical reasoning.

Figure 17.18 Assumed Journal Entry for Extinguishment of Debt

To balance this entry, cash of $229,000 must have been paid. Spending this amount to settle a $204,000 liability does create the $25,000 reported loss. This cash outflow of $229,000 relates to a liability and is thus listed on the statement of cash flows as a financing activity.

Issuance of treasury stock. This equity balance reflects the cost of repurchased shares. During the year, the total in the T-account fell by $100,000 from $400,000 to $300,000. Apparently, $100,000 was the cost of the shares reissued to the public. At the same time, the capital in excess of cost balance rose from $120,000 to $160,000. That $40,000 increase in contributed capital must have been created by this sale. The shares were sold for more than their purchase price.

Figure 17.19 Assumed Journal Entry for Sale of Treasury Stock

If the original cost of the treasury stock was $100,000 and an amount $40,000 in excess of cost was recorded, the cash inflow from this transaction was $140,000. Cash received from the issuance of treasury stock is reported as a financing activity of $140,000 because it relates to a stockholders' equity account.

Distribution of dividend. A dividend has been paid but the amount is not shown in the information provided. Net income was reported as $200,000. Those profits always increase retained earnings. As a result, the beginning balance of $454,000 should increase to $654,000. Instead, retained earnings only rose to $619,000 by the end of the year. The unexplained drop of $35,000 ($654,000 less $619,000) must have resulted from the payment of the dividend. No other possible reason is given for this reduction. Hence, a cash dividend distribution of $35,000 is shown within the statement of cash flows as a financing activity.

Figure 17.20 Assumed Journal Entry for Payment of Dividend

Retained Earnings (or Dividend Paid)	35,000	
Cash		35,000

In this example, four specific financing activity transactions have been identified as created changes in cash.

Figure 17.21 Statement of Cash Flows Financing Activities

Borrowed on Note Payable	$400,000
Extinguishment of Note Payable	(229,000)
Issuance of Treasury Stock	140,000
Distribution of Cash Dividend	(35,000)
Net Cash Inflow—Financing Activities	$276,000

All the sources and uses of this company's cash (as it related to financing activities) are apparent from this schedule. Determining the cash amounts can take some computation but the information is then clear and useful.

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093001.html

Exercise

Link to multiple-choice question for practice purposes: http://www.quia.com/quiz/2093002.html

Key Takeaway

To determine cash flows from investing activities, the accountant must analyze the changes that have taken place in each nonoperational asset such as buildings and equipment. Journal entries can be recreated to show the amount of any cash inflow or cash outflow. For financing activities, a similar process is applied to each nonoperational liability (notes and bonds payable, for example) and stockholders' equity accounts. Once all changes in these accounts have been determined, the statement of cash flows can be produced.

Talking with a Real Investing Pro (Continued)

Following is the conclusion of our interview with Kevin G. Burns.

Question: Many investors watch the movement of a company's reported net income and earnings per share and make investment decisions based on increases or decreases. Other investors argue that the amount of cash flows generated by operating activities is really a more useful figure. When you make investing decisions are you more inclined to look at net income or cash flows generated by operating activities?

Kevin Burns: As I have said previously, net income and earnings per share have a lot of subjectivity to them. Unfortunately, cash flow information can be badly misused also. A lot of investors seem fascinated by EBITDA which is the company's earnings before interest, taxes, depreciation, and amortization. I guess you could say that it is kind of like blending net income and cash flows. But, to me, interest and taxes are real cash expenses so why exclude them? The biggest mistake I ever made as an investor or financial advisor was putting too much credence in EBITDA as a technique for valuing a business. Earnings are earnings and that is important information. A lot of analysts now believe that different cash flow models should be constructed for different industries. If you look around, you can find cable industry cash flow models, theater cash flow models, entertainment industry cash flow models, and the like. I think that is a lot of nonsense. You have to obtain a whole picture to know if an investment is worthwhile. While cash generation is important in creating that picture so are actual earnings and a whole lot of other financial information.

17.5 Appendix

Comprehensive Illustration—Statement of Cash Flows

Question: The three sections of the statement of cash flows have been presented in this chapter but in separate coverage. Now, through a comprehensive illustration, these categories will be combined into a formal and complete statement.

The following information has been uncovered within the internal records maintained by the Ashe Corporation for the Year 2XX1. The company is a small organization that was incorporated several years ago in the western part of North Carolina.

A few of the significant financial events that occurred during the current year are as follows:

- *Land that had cost Ashe $7,000 several years ago was sold to an outside buyer.*
- *A building was also sold but for $210,000 in cash. This property had an original cost of $230,000. Accumulated depreciation to date on the building was $30,000.*
- *Equipment was purchased for $44,000 in cash to replace other equipment that was sold at the beginning of the year.*
- *An additional $110,000 in cash was borrowed on a note payable.*
- *Common stock was issued to an investor for $5,000.*
- *A cash dividend was declared and paid to the owners near the end of the year.*

Ashe Corporation is now attempting to prepare its first complete set of financial statements as part of an application for a new loan. Company officials have created the following informal balance sheets and income statement.

Figure 17.22 Ashe Corporation—2XX1 Beginning and Ending Balance Sheets

	January 1, 2XX1	December 31, 2XX1
Cash	$1,000	$27,000
Accounts Receivable	13,000	28,000
Inventory	17,000	13,000
Land	21,000	14,000
Buildings	390,000	420,000
Less Accumulated Depreciation	(120,000)	(160,000)
Equipment	36,000	50,000
Less Accumulated Depreciation	(17,000)	(20,000)
	$341,000	$372,000
Accounts Payable	18,000	22,000
Wages Payable	1,000	4,000
Interest Payable	2,000	3,000
Taxes Payable	10,000	9,000
Notes Payable	120,000	130,000
Capital Stock	50,000	55,000
Retained Earnings	140,000	149,000
	$341,000	$372,000

Figure 17.23 Ashe Corporation—Income Statement for Year Ended December 31, 2XX1

Sales	$274,000
– Loss on Sale of Land	(5,000)
+ Gain on Sale of Building	10,000
– Cost of Goods Sold	(79,000)
– Wages Expense	(40,000)
– Depreciation Expense—Buildings	(70,000)
– Depreciation Expense—Equipment	(30,000)
– Interest Expense	(9,000)
– Income Tax Expense	(11,000)
= Net Income	$40,000

A statement of cash flows now needs to be created for the Ashe Corporation. As shown in the balance sheet, cash increased from $1,000 to $27,000 during the course of this year. That $26,000 change should be explained. How does a company construct an entire statement of cash flows? Application of the indirect method for presenting operating activities is so prevalent that company officials have decided to use it.

Operating Activities

Answer:

In both the direct and indirect methods, cash flows from operating activities are derived by following several specific steps:

1. Start with net income, either the balance for the period (the indirect method) or the income statement as a whole (the direct method).

2. Remove noncash expenses such as depreciation.
3. Remove nonoperating gains and losses because they relate to either investing activities or financing activities.
4. Convert the remaining revenue and expense balances from accrual accounting to cash accounting by adjusting for the changes occurring during the year in related connector accounts.
    1. Because the indirect method is being used here, the preparation of the operating activities section begins with Ashe Corporation's reported net income of $40,000.
    2. Depreciation is eliminated. This year, the reported amount is $70,000 (buildings) and $30,000 (equipment). As expenses, depreciation is a negative within net income. To remove these two negative amounts, they are added back to the net income figure. Negatives are removed by the inclusion of a positive.
    3. Likewise, both the loss on the sale of land and the gain on sale of a building are removed. Neither relates to an operating activity. The loss is eliminated by an addition to net income while the gain is offset by means of a subtraction.
    4. Only one step remains: adjustment for increases and decreases in the various connector accounts reported by Ashe Corporation in its balance sheet accounts.

Figure 17.24 Ashe Corporation—Change in Connector Accounts

Income Statement Account	Connector Account	Change in Connector Account
Sales	Accounts Receivable	Increase of $15,000
Cost of Goods Sold	Inventory	Decrease of $4,000
	Accounts Payable	Increase of $4,000
Wages Expense	Wages Payable	Increase of $3,000
Interest Expense	Interest Payable	Increase of $1,000
Income Tax Expense	Taxes Payable	Decrease of $1,000

The change in each of these six connector accounts—accounts receivable, inventory, accounts payable, wages payable, interest payable, and taxes payable—must be factored into the computation of cash flows from operating activities to arrive at the actual effect on cash for the period.

Accounts receivable—increase of $15,000. The receivables balance rises because more sales are made on credit than cash is collected. The reduction in the cash received causes the receivable to go up. *This decrease in cash collections is reflected by subtracting the $15,000 from net income*.

Inventory—decrease of $4,000. The inventory balance dropped, which indicates that less inventory was bought than was sold this year. Fewer purchases take less money, keeping the cash balance high. *The decrease in inventory and its impact on cash are reported by an addition to net income*.

Accounts payable—increase of $4,000. Liabilities increase because more debt is acquired than the amount of cash paid. Slowness of payment increases accounts payable but also helps keep the company's cash balance high. *This increase in accounts payable must be added to net income to arrive at the cash flows from operating activities*.

Wages payable—increase of $3,000 and interest payable—increase of $1,000. Both of these accrued liabilities went up during this year. Once again, an increase in a liability indicates a reduction in payments. *This saving of cash is shown within the indirect method by adding the increases in wages payable and interest payable to net income*.

Taxes payable—decrease of $1,000. A liability goes down because of cash payments that reduce the obligation. However, they also shrink the amount of cash held. *This effect is mirrored by subtracting the decrease in the liability from net income*.

The steps for determining cash flows generated by operating activities have been completed (using the indirect method) and this part of the statement of cash flows can be prepared.

Figure 17.25 Ashe Corporation Cash Flows from Operating Activities for Year Ended December 31, 2XX1—Indirect Method

Net Income	$40,000
Eliminate:	
Depreciation Expense—Buildings	+70,000
Depreciation Expense—Equipment	+30,000
Loss on Sale of Land	+5,000
Gain on Sale of Building	(10,000)
Adjust Revenues and Expenses from Accrual Accounting to Cash:	
Increase in Accounts Receivable	(15,000)
Decrease in Inventory	+4,000
Increase in Accounts Payable	+4,000
Increase in Wages Payable	+3,000
Increase in Interest Payable	+1,000
Decrease in Taxes Payable	(1,000)
Cash Inflow from Operating Activities	$131,000

As can be seen here, cash generated by operating activities ($131,000) is considerably higher than the net income reported for the period ($40,000). That is not uncommon in the world of business especially since depreciation is often a large expense that does not require cash.

Investing Activities

After accounting for operating activities, only three asset accounts remain to be examined (along with their accumulated depreciation balances where appropriate): land, buildings, and equipment. The accountant looks at each individually and attempts to recreate the transactions that brought about the various changes during the year.

Land decreased by $7,000 ($21,000 to $14,000). The information provided states that land costing $7,000 was sold but does not indicate the amount of cash received in the exchange. However, the income statement discloses a $5,000 loss on the sale of land. When land costing $7,000 is sold at a $5,000 loss, only $2,000 in cash is received. The journal entry recorded by Ashe Corporation must have been as follows.

Figure 17.26 Assumed Journal Entry for Sale of Land

Cash	2,000	
Loss on Sale of Land	5,000	
Land		7,000

Land is an asset so this inflow of cash will be reported as an investing activity.

Buildings increased by $30,000 ($390,000 to $420,000). According to the introductory information, one building with a cost of $230,000 and a net book value of $200,000 (related accumulated depreciation was identified as $30,000) was sold during this year for $210,000. Those amounts create the $10,000 gain that appears in the company's income statement.

Figure 17.27 Assumed Journal Entry for Sale of Building

Cash	210,000	
Accumulated Depreciation	30,000	
Building		230,000
Gain on Sale of Building		10,000

This transaction will be listed as a cash inflow within investing activities. However, the change in the buildings account is not yet fully explained. The above sale drops that account from $390,000 to $160,000 (a $230,000 reduction in cost). The final balance for the year was not $160,000 but rather $420,000, an increase of $260,000. Without mention of additional transactions, the assumption is made that another building was acquired during the period at that price.

Figure 17.28 Assumed Journal Entry for Purchase of Building

Buildings	260,000	
Cash		260,000

This second building transaction is also included within the investing activities but as a cash outflow.

Equipment increased by $14,000 ($36,000 to $50,000). The provided information states that one piece of equipment was purchased during the year for $44,000. This transaction identifies another cash outflow to be reported.

Figure 17.29 Assumed Journal Entry for Purchase of Equipment

Equipment	44,000	
Cash		44,000

This journal entry does not entirely explain the change that occurred in the equipment account. The beginning balance of $36,000 grew to $80,000 as a result of this purchase. Yet, the ending balance was just $50,000. Another $30,000 reduction ($80,000 less $50,000) took place. Equipment accounts decrease as the result of a sale or some other type of disposal. The $30,000 is the cost of equipment that was sold this period.

In recording the disposal of a long-lived asset, removal of any related accumulated depreciation is also necessary. For the equipment reported by Ashe Corporation, beginning accumulated depreciation was $17,000—a figure that increased by $30,000 due to depreciation for that year (to a balance of $47,000). Ending accumulated depreciation account shows a balance of only $20,000. The apparent reduction of $27,000 ($47,000 less $20,000) must have been the amount relating to the equipment that was sold. That was the accumulated depreciation removed in recording the disposal of this asset.

Because no gain or loss is reported in the income statement on the disposal of equipment, the amount received must have been equal to the $3,000 net book value of the asset ($30,000 less $27,000).

Figure 17.30 Assumed Journal Entry for Sale of Equipment

Cash	3,000	
Accumulated Depreciation	27,000	
Equipment		30,000

All the changes in the land, buildings, and equipment accounts have now been examined. Each individual transaction was recreated and the change in cash calculated. The investing activity section of the statement of cash flows is prepared as follows.

Figure 17.31 Ashe Corporation Cash Flows from Investing Activities for Year Ended December 31, 2XX1

Sale of Land	$2,000
Sale of Building	210,000
Purchase of Building	(260,000)
Purchase of Equipment	(44,000)
Sale of Equipment	3,000
Cash Outflow from Investing Activities	($89,000)

Financing Activities

Only three accounts remain unexamined: notes payable, capital stock, and retained earnings. They are all either liabilities or stockholders' equity accounts and, thus, lead to financing activities.

Notes payable increased by $10,000 ($120,000 to $130,000). The information gathered from the company disclosed the signing of a note payable for $110,000 in cash. This first transaction is obviously an inflow of that amount of cash.

Figure 17.32 Assumed Journal Entry for Signing of Note Payable

According to the beginning and ending balance sheets, notes payable did not increase by $110,000 but only by $10,000. Thus, another transaction must have taken place that reduced this liability by $100,000. Notes payable decrease because of cash payments. Because no gain or loss on extinguishment of debt is reported in the income statement, Ashe Corporation must have paid exactly $100,000 to retire that same amount of debt.

Figure 17.33 Assumed Journal Entry for Extinguishment of Note Payable

The recording of this second transaction leads to the appropriate change in notes payable ($10,000 increase created by a $110,000 liability increase and a $100,000 decrease). It also uncovers another cash flow from financing activities: the $100,000 that was paid on the liability.

Capital stock increased by $5,000 ($50,000 to $55,000). The information states that Ashe Corporation issued stock to an investor for $5,000. That contribution created this account change.

Figure 17.34 Assumed Journal Entry for Issuance of Capital Stock

The business received this money and must report a financing activity cash inflow of $5,000. No other stock transactions are indicated.

Retained earnings increased by $9,000 ($140,000 to $149,000). This final balance sheet account increased by $40,000 because of the net income earned by Ashe Corporation this year. This amount is closed into retained

earnings at the end of the year. The cash flows relating to net income have already been presented above within operating activities.

Retained earnings must have also declined by $31,000 to create the overall change of $9,000. As mentioned previously, other than net income, retained earnings are changed by virtually only one other event: the distribution of dividends. The information mentions that a dividend was paid this year and must have made up this $31,000 difference. Net income of $40,000 and a dividend of $31,000 do arrive at the reported increase in retained earnings of $9,000.

Figure 17.35 Assumed Journal Entry for Payment of Cash Dividend

With this final financing activity, the entire statement of cash flows can be created for the Ashe Corporation. All the transactions that affected cash during the year are included so that investors and other interested parties can gain a picture of the results of operations as well as the investing and financing decisions of management. This picture is an excellent complement to the income statement, statement of retained earnings, and balance sheet.

Figure 17.36 Ashe Corporation Statement of Cash Flows Year Ended December 31, 2XX1

Net Income	$40,000
Eliminate:	
Depreciation Expense—Buildings	+70,000
Depreciation Expense—Equipment	+30,000
Loss on Sale of Land	+5,000
Gain on Sale of Building	(10,000)
Adjust Revenues and Expenses from Accrual Accounting to Cash:	
Increase in Accounts Receivable	(15,000)
Decrease in Inventory	+4,000
Increase in Accounts Payable	+4,000
Increase in Wages Payable	+3,000
Increase in Interest Payable	+1,000
Decrease in Taxes Payable	(1,000)
Cash Inflow from Operating Activities	$131,000
Sale of Land	$2,000
Sale of Building	210,000
Purchase of Building	(260,000)
Purchase of Equipment	(44,000)
Sale of Equipment	3,000
Cash Outflow from Investing Activities	($89,000)
Signed Note Payable	$110,000
Paid Note Payable	(100,000)
Issued Common Stock	5,000
Paid Cash Dividend	(31,000)
Cash Outflow from Financing Activities	(16,000)
Increase in Cash during 2XX1	$26,000
Beginning Cash Balance, January 1, 2XX1	1,000
Ending Cash Balance, December 31, 2XX1	$27,000

Video Clip

" href="http://app.wistia.com/embed/medias/bd279f1fca" class="replaced-iframe">(click to see video)

Unnamed Author talks about the five most important points in Chapter 17 “In a Set of Financial Statements, What Information Is Conveyed by the Statement of Cash Flows?”.

17.6 End-of-Chapter Exercises

Questions

1. Why are decision makers interested in a company's statement of cash flows?
2. What is the purpose of the statement of cash flows?
3. What is a cash equivalent?
4. What are the three classifications of the statement of cash flows?
5. What is the general definition of operating activities?
6. Give three activities likely to be found in the operating section.
7. What is the general definition of investing activities?
8. Give three activities likely to be found in the investing section.
9. What is the general definition of financing activities?
10. Give three activities likely to be found in the financing section.
11. What are the two methods used to calculate cash flows from operating activities?
12. Name the three steps used to convert a company's income statement to cash flows from operating activities using the direct method.
13. Why are interest and dividend revenue and interest expense included as operating activities?
14. Why can it be difficult to determine cash flows from investing and financing activities?

True or False

1. ____ Both the indirect and direct methods of calculating cash flows from operations begin with net income.
2. ____ Purchasing treasury stock is an example of a financing activity.
3. ____ Presenting the statement of cash flows is optional according to U.S. GAAP.
4. ____ Some analysts believe the cash flow from operating activities is a better measure of a company than its net income.
5. ____ A loss on the sale of equipment would be shown in the operating section because it is shown on the income statement.
6. ____ Investing and financing activities not involving cash still need to be disclosed.
7. ____ Accrual accounting causes differences to exist between the income statement and operating section of the statement of cash flows.
8. ____ Payment of interest and dividends are both operating activities.
9. ____ Most companies use the direct method of calculating cash flows from operating activities.
10. ____ Depreciation expense is never a cash expense.

Multiple Choice

1. Where would cash collected from customers appear on the statement of cash flows?
    1. Operating section
    2. Investing section
    3. Financing section
    4. Supplemental schedule
2. Fritz Corporation began the year with $900,000 in accounts receivable. During the year, revenue totaled $7,000,000. Fritz ended the year with $750,000 in accounts receivable. How much cash did Fritz collect from customers during the year?
    1. $750,000
    2. $7,150,000
    3. $6,850,000
    4. $900,000
3. Where would the redemption of bonds payable appear on the statement of cash flows?
    1. Operating section
    2. Investing section
    3. Financing section
    4. Supplemental schedule
4. During the year, Rafael Corporation paid dividends of $23,000, received cash by signing a note payable of $105,000, purchased a piece of equipment for $29,400 and received dividend income of $12,000. What would be Rafael's cash flow from financing activities for the year?
    1. $64,600
    2. $82,000
    3. $52,600
    4. $94,000
5. Happy Toy Company began 20X9 with $1,000 in inventory and $4,500 in accounts payable. During the year, Happy Toy incurred cost of goods sold of $25,000. Happy Toy ended 20X9 with $2,700 in inventory and $3,800 in accounts payable. How much cash did Happy Toy pay for purchases during 20X9?
    1. $26,000
    2. $22,600
    3. $24,000
    4. $27,400
6. Where would the purchase of available for sale securities appear on the statement of cash flows?
    1. Operating section
    2. Investing section

3. Financing section
4. Supplemental schedule

7. Crystal Bell Company generated $48,900 in net income during the year. Included in this number are a deprecation expense of $13,000 and a gain on the sale of equipment of $4,000. In addition, accounts receivable increased by $16,000, inventory decreased by $5,090, accounts payable decreased $4,330 and interest payable increased $1,200. Based on the above information, what would Crystal Bell's cash flow from operations using the indirect method?

    1. $54,120
    2. $71,940
    3. $48,900
    4. $43,860

8. Transportation Inc. incurred rent expense of $98,000 during the year. Prepaid rent increased by $34,000 during the year. How much cash did Transportation pay for rent during the year?

    1. $98,000
    2. $64,000
    3. $132,000
    4. $34,000

Problems

1. Use the following abbreviations to indicate in which section of the statement of cash flows you would find each item below.

    O = Operating Section

    I = Investing Section

    F = Financing Section

    1. ____ Issuance of bonds payable
    2. ____ Cash paid for interest
    3. ____ Cash collected from customers
    4. ____ Paid dividends
    5. ____ Sold equipment
    6. ____ Issued preferred stock
    7. ____ Cash paid for inventory purchases
    8. ____ Purchased an equity investment in another company
    9. ____ Cash received from dividend income

2. Roy Company enjoyed sales during 20X1 of $120,000. Roy began the year with $56,000 in accounts

receivable and ended the year with $79,000 in accounts receivable. Determine the amount of cash Roy collected from customers during 20X1.

3. Whitmore Corporation had cost of goods sold of $4,793,000 during the year. Whitmore had the following account balances at the beginning and end of the year.

Figure 17.37 Change in Inventory and Account Payable Balances

	Beginning of Year	End of Year
Inventory	$893,000	$672,000
Accounts Payable	$569,000	$571,000

What amount of cash did Whitmore pay for inventory purchases this year?

4. Jamison Company's income statement for 20X6 is below.

Figure 17.38 Jamison Company Income Statement as of 12/31/X6

Jamison Company
Income Statement
As of 12/31/X6

Revenue	$76,450
Cost of Goods Sold	(40,740)
Gross Profit	35,710
Depreciation Expense	(8,240)
Other Expenses	(19,000)
Earnings Before Tax	8,470
Tax Expense	(2,076)
Net Income	$6,394

Figure 17.39 Selected Balance Sheet Accounts from the Beginning and End of 20X6

	1/1/X6	12/31/X6
Accounts Receivable	$32,590	$34,090
Inventory	23,100	35,020
Prepaid Expenses	13,970	11,340
Accounts Payable	39,870	44,960
Salaries Payable	22,030	17,440
Taxes Payable	12,490	11,230

Determine Jamison's cash flow from operations using both the direct and indirect methods.

5. Killian Corporation had several transactions during the year that impacted long-term assets and liabilities

and owners' equity. Determine if each of the following items would be shown in investing activities, financing activities or neither.

Figure 17.40 Determination of Cash Flow Balances

	Investing Activity	Financing Activity	Neither
Sold Common Stock			
Signed a Note Payable for Cash			
Purchased Equipment by Signing a Note Payable			
Sold Land			
Redeemed Bonds Payable			
Declared Dividends to Be Paid Next Year			
Purchased an Investment in Knox Company			

6. Ruthers Corporation began business on January 1, 20X5. The financial statements for Ruthers' first year are given below. Because it is the first year of the company, there are no beginning balances for the balance sheet accounts. This should simplify your preparation of the cash flow statement.

Figure 17.41 Ruthers Corporation Income Statement as of 12/31/X5

Ruthers Corporation
Income Statement
As of 12/31/X5

Revenue	$14,900
Cost of Goods Sold	(6,780)
Gross Profit	8,120
Other Expenses	(3,910)
Earnings Before Tax	4,210
Tax Expense	(1,263)
Net Income	$2,947

Figure 17.42 Ruthers Corporation Balance Sheet 12/31/X5

Ruthers Corporation
Balance Sheet
12/31/X5

Assets		**Liabilities**	
Cash	$900	Accounts Payable	$1,830
Accounts Receivable	1,990	Salaries Payable	700
Inventory	2,510	Note Payable	10,000
Prepaid Expenses	577	Total Liabilities	$12,530
Land	14,000		
		Owners' Equity	
		Common Stock	4,500
		Retained Earnings	2,947
		Total Owners' Equity	7,447
		Total Liabilities & Owners' Equity	
Total Assets	$19,977		$19,977

Additional Information:

1. Ruthers purchased land for $14,000 cash.
2. Common stock was issued for $4,500.
3. A note payable was signed for $10,000 cash.

Prepare Ruthers' statement of cash flows for 20X5 using the indirect method of calculating cash flows from operations.

7. Looney Company is in the process of preparing financial statements for the year ended 12/31/X9. The

income statement as of 12/31/X9 and comparative balance sheets are presented below. Note that the Balance Sheet is presented with the most current year first, as is done in practice.

Figure 17.43 Looney Company Income Statement as of 12/31/X9

Looney Company
Income Statement
As of 12/31/X9

Sales	$6,328
Cost of Goods Sold	(4,740)
Gross Profit	1,588
Selling and Administrative Expenses	(895)
Depreciation Expense	(140)
Earnings Before Interest and Taxes	553
Interest Expense	(100)
Earnings Before Tax	453
Tax Expense	(108)
Net Income	$345

Figure 17.44 Looney Company Balance Sheet December 31, 20X9 and 20X8

Looney Company
Balance Sheet
December 31, 20X9 and 20X8

	20X9	20X8
Assets		
Cash	$485	$98
Accounts Receivable	960	990
Inventories	1,580	1,802
Property, Plant, and Equipment	1,710	1,620
Less: Accumulated Depreciation	(390)	(250)
Total Assets	$4,345	$4,260
Liabilities and Owners' Equity		
Accounts Payable	$200	$545
Interest Payable	50	80
Income Tax Payable	120	130
Long-Term Debt	1,500	1,430
Total Liabilities	$1,870	$2,185
Capital in Excess of Par	1,164	1,120
Common Stock, $1 Par	291	280
Retained Earnings	1,020	675
Total Owners' Equity	$2,475	$2,075
Total Liabilities and Equity	$4,345	$4,260

The following additional information has been assembled by Looney's accounting department:

1. Equipment was purchased for $90.
2. Long-term debt of $70 was issued for cash.
3. Looney issued eleven shares of common stock for cash during 20X9.

Prepare Looney's statement of cash flows as of 12/31/X9 using the direct method.

8. The following information relates to Henrich's Hat Store Inc. for the year ended December 31, 20X8.

Figure 17.45 Henrich's Hat Store Inc. Balance Sheet

Henrich's Hat Store, Inc.
Balance Sheet
December 31

	20X8	20X7
Assets		
Current Assets		
Cash	$280,000	$300,000
Accounts Receivable	750,000	690,000
Inventory	660,000	320,000
Total Current Assets	1,690,000	1,310,000
Land	300,000	0
Building and Fixtures	700,000	550,000
Less: Accumulated Depreciation	(100,000)	(80,000)
Total Assets	$2,590,000	$1,780,000
Liabilities		
Current Liabilities		
Accounts Payable	$460,000	$430,000
Taxes Payable	200,000	170,000
Total Current Liabilities	660,000	600,000
Stockholders' Equity		
Common Stock	$200,000	$150,000
Capital in Excess of Par	1,220,000	750,000
Retained Earnings	510,000	280,000
Total Stockholders' Equity	1,930,000	1,180,000
Total Liabilities and Stockholders' Equity	$2,590,000	$1,780,000

Figure 17.46 Henrich's Hat Store Inc. Income Statement for the Year Ended December 31, 20X8

Henrich's Hat Store, Inc.
Income Statement
Year Ended December 31, 20X8

Sales Revenue	$6,000,000
Cost of Goods Sold	(4,600,000)
Gross Profit	1,400,000
Depreciation Expense	(20,000)
Other Expenses	(840,000)
Earnings Before Tax	540,000
Tax Expense	(140,000)
Net Income	$400,000

Other information:

1. The company purchased a building and fixtures with cash during the year, but none were sold.
2. Dividends of $170,000 were declared and paid.
3. Proceeds from the sale of common stock totaled $520,000.
4. Land was purchased for $300,000 cash.

Prepare the statement of cash flows for Henrich's Hat Store Inc. for the year ended December 31, 20X8 using the indirect method of calculating cash flows from operations.

Comprehensive Problem

This problem has carried through several chapters, building in difficulty. Hopefully, it has allowed students to continuously practice skills and knowledge learned in previous chapters.

In Chapter 16 "In a Set of Financial Statements, What Information Is Conveyed about Shareholders' Equity?", you prepared Webworks statements for April. They are included here as a starting point for May. This will be your final month of preparing financial statements for Webworks. This month, the statement of cash flows will be added. To simply the problem, fewer transactions than usual are included.

Here are Webworks financial statements as of April 30.

Figure 17.47 Webworks Financial Statements

Webworks
Income Statement
As of April 30

Revenue	$23,200
Cost of Goods Sold	(12,707)
Gross Profit	10,493
Deprec. and Amort. Expense	(392)
Other Expenses and Losses	(9,045)
Investment Income (Loss)	200
Earnings Before Interest & Tax	1,256
Interest Expense	(15)
Earnings Before Tax	1,241
Tax Expense	(372)
Net Income	$869

Figure 17.48

Webworks
Stmt. of Retained Earnings
As of April 30

Retained Earnings, April 1	$19,601
Net Income	869
Dividends	(500)
Retained Earnings, April 30	$19,970

Figure 17.49

Webworks
Balance Sheet
April 30

Assets		**Liabilities**	
Current		**Current**	
Cash	$11,905	Accounts Payable	$3,080
Accounts Receivable	2,050	Salaries Payable	100
Less Allowance for Doubtful Accounts	(205)	Interest Payable	45
Net Accounts Receivable	1,845		
Merchandise Inventory	3,362		
Supplies Inventory	65		
Total Current Assets	$17,177	Total Current Liabilities	$3,225
Property, Plant, and Equipment		**Noncurrent**	
		Note Payable	$3,000
Equipment	$10,500		
Less Accumulated Depreciation	(1,313)		
Furniture	1,000		
Less Accumulated Depreciation	(119)		
Total P, P, and E	$10,068		
Other Noncurrent Assets		**Owners' Equity**	
Available for Sale Securities	$2,450	Capital Stock	$4,000
Licensing Agreement, Net	1,200	Retained Earnings	19,970
		Other Accumulated Comprehensive Income:	
		Unrealized Gain on Available for Sale Securities	700
		Total Owners' Equity	$24,670
Total Assets	$30,895	Total Liabilities & Owners' Equity	$30,895

The following events occur during May:

a. Webworks starts and completes twelve more Web sites and bills clients for $9,000.

b. Webworks purchases supplies worth $140 on account.

c. At the beginning of May, Webworks had twenty-two keyboards costing $121 each and twenty-eight flash drives costing $25 each. Webworks uses periodic FIFO to cost its inventory.

d. On account, Webworks purchases eighty-three keyboards for $122 each and ninety flash drives for $26 each.

e. Webworks sells 98 keyboards for $14,700 and 100 of the flash drives for $3,000 cash.

f. Webworks collects $9,000 in accounts receivable.

g. Webworks pays its $500 rent.

h. Webworks pays off $14,000 of its accounts payable.

i. Webworks sells all of its shares of QRS stock for $14 per share.

j. Webworks pays Juan $750 for his work during the first three weeks of May.

k. Webworks pays off its salaries payable from April.

l. Webworks pays Leon and Nancy a salary of $4,000 each.

m. Webworks' note payable permits early payment with no penalty. Leon and Nancy decide to use some of their excess cash and pay off the note and interest payable. The note was paid at the beginning of May, so no interest accrued during May.

n. Webworks pays taxes of $740 in cash.

Required:

A. Prepare journal entries for the above events.

B. Post the journal entries to T-accounts.

C. Prepare an unadjusted trial balance for Webworks for May.

D. Prepare adjusting entries for the following and post them to your T-accounts.

o. Webworks owes Juan $200 for his work during the last week of May.

p. Webworks receives an electric bill for $450. Webworks will pay the bill in June.

q. Webworks determines that it has $70 worth of supplies remaining at the end of May.

r. Webworks is continuing to accrue bad debts at 10 percent of accounts receivable.

s. Webworks continues to depreciate its equipment over five years and its furniture over five years, using the straight-line method.

t. The license agreement should be amortized over its one-year life.

u. Record cost of goods sold.

E. Prepare an adjusted trial balance.

F. Prepare financial statements, including the statement of cash flows, for May. Prepare the operating section using the indirect method.

Appendix: Present Value Tables

Figure 17.1 Present Value of $1

Periods	Rate per Period													
	1.00%	1.50%	2.00%	2.50%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%	11.00%	12.00%
1	0.99010	0.98522	0.98039	0.97561	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909	0.90090	0.89286
2	0.98030	0.97066	0.96117	0.95181	0.94260	0.92456	0.90703	0.89000	0.87344	0.85734	0.84168	0.82645	0.81162	0.79719
3	0.97059	0.95632	0.94232	0.92860	0.91514	0.88900	0.86384	0.83962	0.81630	0.79383	0.77218	0.75131	0.73119	0.71178
4	0.96098	0.94218	0.92385	0.90595	0.88849	0.85480	0.82270	0.79209	0.76290	0.73503	0.70843	0.68301	0.65873	0.63552
5	0.95147	0.92826	0.90573	0.88385	0.86261	0.82193	0.78353	0.74726	0.71299	0.68058	0.64993	0.62092	0.59345	0.56743
6	0.94205	0.91454	0.88797	0.86230	0.83748	0.79031	0.74622	0.70496	0.66634	0.63017	0.59627	0.56447	0.53464	0.50663
7	0.93272	0.90103	0.87056	0.84127	0.81309	0.75992	0.71068	0.66506	0.62275	0.58349	0.54703	0.51316	0.48166	0.45235
8	0.92348	0.88771	0.85349	0.82075	0.78941	0.73069	0.67684	0.62741	0.58201	0.54027	0.50187	0.46651	0.43393	0.40388
9	0.91434	0.87459	0.83676	0.80073	0.76642	0.70259	0.64461	0.59190	0.54393	0.50025	0.46043	0.42410	0.39092	0.36061
10	0.90529	0.86167	0.82035	0.78120	0.74409	0.67556	0.61391	0.55839	0.50835	0.46319	0.42241	0.38554	0.35218	0.32197
11	0.89632	0.84893	0.80426	0.76214	0.72242	0.64958	0.58468	0.52679	0.47509	0.42888	0.38753	0.35049	0.31728	0.28748
12	0.88745	0.83639	0.78849	0.74356	0.70138	0.62460	0.55684	0.49697	0.44401	0.39711	0.35553	0.31863	0.28584	0.25668
13	0.87866	0.82403	0.77303	0.72542	0.68095	0.60057	0.53032	0.46884	0.41496	0.36770	0.32618	0.28966	0.25751	0.22917
14	0.86996	0.81185	0.75788	0.70773	0.66112	0.57748	0.50507	0.44230	0.38782	0.34046	0.29925	0.26333	0.23199	0.20462
15	0.86135	0.79985	0.74301	0.69047	0.64186	0.55526	0.48102	0.41727	0.36245	0.31524	0.27454	0.23939	0.20900	0.18270
16	0.85282	0.78803	0.72845	0.67362	0.62317	0.53391	0.45811	0.39365	0.33873	0.29189	0.25187	0.21763	0.18829	0.16312
17	0.84438	0.77639	0.71416	0.65720	0.60502	0.51337	0.43630	0.37136	0.31657	0.27027	0.23107	0.19784	0.16963	0.14564
18	0.83602	0.76491	0.70016	0.64117	0.58739	0.49363	0.41552	0.35034	0.29586	0.25025	0.21199	0.17986	0.15282	0.13004
19	0.82774	0.75361	0.68643	0.62553	0.57029	0.47464	0.39573	0.33051	0.27651	0.23171	0.19449	0.16351	0.13768	0.11611
20	0.81954	0.74247	0.67297	0.61027	0.55368	0.45639	0.37689	0.31180	0.25842	0.21455	0.17843	0.14864	0.12403	0.10367
21	0.81143	0.73150	0.65978	0.59539	0.53755	0.43883	0.35894	0.29416	0.24151	0.19866	0.16370	0.13513	0.11174	0.09256
22	0.80340	0.72069	0.64684	0.58086	0.52189	0.42196	0.34185	0.27751	0.22571	0.18394	0.15018	0.12285	0.10067	0.08264
23	0.79544	0.71004	0.63416	0.56670	0.50669	0.40573	0.32557	0.26180	0.21095	0.17032	0.13778	0.11168	0.09069	0.07379
24	0.78757	0.69954	0.62172	0.55288	0.49193	0.39012	0.31007	0.24698	0.19715	0.15770	0.12640	0.10153	0.08170	0.06588
25	0.77977	0.68921	0.60953	0.53939	0.47761	0.37512	0.29530	0.23300	0.18425	0.14602	0.11597	0.09230	0.07361	0.05882
30	0.74192	0.63976	0.55207	0.47674	0.41199	0.30832	0.23138	0.17411	0.13137	0.09938	0.07537	0.05731	0.04368	0.03338
40	0.67165	0.55126	0.45289	0.37243	0.30656	0.20829	0.14205	0.09722	0.06678	0.04603	0.03184	0.02209	0.01538	0.01075
50	0.60804	0.47500	0.37153	0.29094	0.22811	0.14071	0.08720	0.05429	0.03395	0.02132	0.01345	0.00852	0.00542	0.00346

Figure 17.2 Present Value of Annuity Due (annuity in advance—beginning of period payments)

Periods	Rate per Period													
	1.00%	1.50%	2.00%	2.50%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%	11.00%	12.00%
1	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
2	1.99010	1.98522	1.98039	1.97561	1.97087	1.96154	1.95238	1.94340	1.93458	1.92593	1.91743	1.90909	1.90090	1.89286
3	2.97040	2.95588	2.94156	2.92742	2.91347	2.88609	2.85941	2.83339	2.80802	2.78326	2.75911	2.73554	2.71252	2.69005
4	3.94099	3.91220	3.88388	3.85602	3.82861	3.77509	3.72325	3.67301	3.62432	3.57710	3.53129	3.48685	3.44371	3.40183
5	4.90197	4.85438	4.80773	4.76197	4.71710	4.62990	4.54595	4.46511	4.38721	4.31213	4.23972	4.16987	4.10245	4.03735
6	5.85343	5.78264	5.71346	5.64583	5.57971	5.45182	5.32948	5.21236	5.10020	4.99271	4.88965	4.79079	4.69590	4.60478
7	6.79548	6.69719	6.60143	6.50813	6.41719	6.24214	6.07569	5.91732	5.76654	5.62288	5.48592	5.35526	5.23054	5.11141
8	7.72819	7.59821	7.47199	7.34939	7.23028	7.00205	6.78637	6.58238	6.38929	6.20637	6.03295	5.86842	5.71220	5.56376
9	8.65168	8.48593	8.32548	8.17014	8.01969	7.73274	7.46321	7.20979	6.97130	6.74664	6.53482	6.33493	6.14612	5.96764
10	9.56602	9.36052	9.16224	8.97087	8.78611	8.43533	8.10782	7.80169	7.51523	7.24689	6.99525	6.75902	6.53705	6.32825
11	10.47130	10.22218	9.98259	9.75206	9.53020	9.11090	8.72173	8.36009	8.02358	7.71008	7.41766	7.14457	6.88923	6.65022
12	11.36763	11.07112	10.78685	10.51421	10.25262	9.76048	9.30641	8.88687	8.49867	8.13896	7.80519	7.49506	7.20652	6.93770
13	12.25508	11.90751	11.57534	11.25776	10.95400	10.38507	9.86325	9.38384	8.94269	8.53608	8.16073	7.81369	7.49236	7.19437
14	13.13374	12.73153	12.34837	11.98318	11.63496	10.98565	10.39357	9.85268	9.35765	8.90378	8.48690	8.10336	7.74987	7.42355
15	14.00370	13.54338	13.10625	12.69091	12.29607	11.56312	10.89864	10.29498	9.74547	9.24424	8.78615	8.36669	7.98187	7.62817
16	14.86505	14.34323	13.84926	13.38138	12.93794	12.11839	11.37966	10.71225	10.10791	9.55948	9.06069	8.60608	8.19087	7.81086
17	15.71787	15.13126	14.57771	14.05500	13.56110	12.65230	11.83777	11.10590	10.44665	9.85137	9.31256	8.82371	8.37916	7.97399
18	16.56225	15.90765	15.29187	14.71220	14.16612	13.16567	12.27407	11.47726	10.76322	10.12164	9.54363	9.02155	8.54879	8.11963
19	17.39827	16.67256	15.99203	15.35336	14.75351	13.65930	12.68959	11.82760	11.05909	10.37189	9.75563	9.20141	8.70162	8.24967
20	18.22601	17.42617	16.67846	15.97889	15.32380	14.13394	13.08532	12.15812	11.33560	10.60360	9.95011	9.36492	8.83929	8.36578
21	19.04555	18.16864	17.35143	16.58916	15.87747	14.59033	13.46221	12.46992	11.59401	10.81815	10.12855	9.51356	8.96333	8.46944
22	19.85698	18.90014	18.01121	17.18455	16.41502	15.02916	13.82115	12.76408	11.83553	11.01680	10.29224	9.64869	9.07507	8.56200
23	20.66038	19.62082	18.65805	17.76541	16.93692	15.45112	14.16300	13.04158	12.06124	11.20074	10.44243	9.77154	9.17574	8.64465
24	21.45582	20.33086	19.29220	18.33211	17.44361	15.85684	14.48857	13.30338	12.27219	11.37106	10.58021	9.88322	9.26643	8.71843
25	22.24339	21.03041	19.91393	18.88499	17.93554	16.24696	14.79864	13.55036	12.46933	11.52876	10.70661	9.98474	9.34814	8.78432
30	26.06579	24.37608	22.84438	21.45355	20.18845	17.98371	16.14107	14.59072	13.27767	12.15841	11.19828	10.36961	9.65011	9.02181
40	33.16303	30.36458	27.90259	25.73034	23.80822	20.58448	18.01704	15.94907	14.26493	12.87858	11.72552	10.75696	9.93567	9.23303
50	39.58808	35.52468	32.05208	29.07137	26.50166	22.34147	19.16872	16.70757	14.76680	13.21216	11.94823	10.90630	10.03624	9.30104

Figure 17.3 Present Value of Ordinary Annuity (annuity in arrears—end of period payments)

Periods	Rate per Period													
	1.00%	1.50%	2.00%	2.50%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%	11.00%	12.00%
1	0.99010	0.98522	0.98039	0.97561	0.97087	0.96154	0.95238	0.94340	0.93458	0.92593	0.91743	0.90909	0.90090	0.89286
2	1.97040	1.95588	1.94156	1.92742	1.91347	1.88609	1.85941	1.83339	1.80802	1.78326	1.75911	1.73554	1.71252	1.69005
3	2.94099	2.91220	2.88388	2.85602	2.82861	2.77509	2.72325	2.67301	2.62432	2.57710	2.53129	2.48685	2.44371	2.40183
4	3.90197	3.85438	3.80773	3.76197	3.71710	3.62990	3.54595	3.46511	3.38721	3.31213	3.23972	3.16987	3.10245	3.03735
5	4.85343	4.78264	4.71346	4.64583	4.57971	4.45182	4.32948	4.21236	4.10020	3.99271	3.88965	3.79079	3.69590	3.60478
6	5.79548	5.69719	5.60143	5.50813	5.41719	5.24214	5.07569	4.91732	4.76654	4.62288	4.48592	4.35526	4.23054	4.11141
7	6.72819	6.59821	6.47199	6.34939	6.23028	6.00205	5.78637	5.58238	5.38929	5.20637	5.03295	4.86842	4.71220	4.56376
8	7.65168	7.48593	7.32548	7.17014	7.01969	6.73274	6.46321	6.20979	5.97130	5.74664	5.53482	5.33493	5.14612	4.96764
9	8.56602	8.36052	8.16224	7.97087	7.78611	7.43533	7.10782	6.80169	6.51523	6.24689	5.99525	5.75902	5.53705	5.32825
10	9.47130	9.22218	8.98259	8.75206	8.53020	8.11090	7.72173	7.36009	7.02358	6.71008	6.41766	6.14457	5.88923	5.65022
11	10.36763	10.07112	9.78685	9.51421	9.25262	8.76048	8.30641	7.88687	7.49867	7.13896	6.80519	6.49506	6.20652	5.93770
12	11.25508	10.90751	10.57534	10.25776	9.95400	9.38507	8.86325	8.38384	7.94269	7.53608	7.16073	6.81369	6.49236	6.19437
13	12.13374	11.73153	11.34837	10.98318	10.63496	9.98565	9.39357	8.85268	8.35765	7.90378	7.48690	7.10336	6.74987	6.42355
14	13.00370	12.54338	12.10625	11.69091	11.29607	10.56312	9.89864	9.29498	8.74547	8.24424	7.78615	7.36669	6.98187	6.62817
15	13.86505	13.34323	12.84926	12.38138	11.93794	11.11839	10.37966	9.71225	9.10791	8.55948	8.06069	7.60608	7.19087	6.81086
16	14.71787	14.13126	13.57771	13.05500	12.56110	11.65230	10.83777	10.10590	9.44665	8.85137	8.31256	7.82371	7.37916	6.97399
17	15.56225	14.90765	14.29187	13.71220	13.16612	12.16567	11.27407	10.47726	9.76322	9.12164	8.54363	8.02155	7.54879	7.11963
18	16.39827	15.67256	14.99203	14.35336	13.75351	12.65930	11.68959	10.82760	10.05909	9.37189	8.75563	8.20141	7.70162	7.24967
19	17.22601	16.42617	15.67846	14.97889	14.32380	13.13394	12.08532	11.15812	10.33560	9.60360	8.95011	8.36492	7.83929	7.36578
20	18.04555	17.16864	16.35143	15.58916	14.87747	13.59033	12.46221	11.46992	10.59401	9.81815	9.12855	8.51356	7.96333	7.46944
21	18.85698	17.90014	17.01121	16.18455	15.41502	14.02916	12.82115	11.76408	10.83553	10.01680	9.29224	8.64869	8.07507	7.56200
22	19.66038	18.62082	17.65805	16.76541	15.93692	14.45112	13.16300	12.04158	11.06124	10.20074	9.44243	8.77154	8.17574	7.64465
23	20.45582	19.33086	18.29220	17.33211	16.44361	14.85684	13.48857	12.30338	11.27219	10.37106	9.58021	8.88322	8.26643	7.71843
24	21.24339	20.03041	18.91393	17.88499	16.93554	15.24696	13.79864	12.55036	11.46933	10.52876	9.70661	8.98474	8.34814	7.78432
25	22.02316	20.71961	19.52346	18.42438	17.41315	15.62208	14.09394	12.78336	11.65358	10.67478	9.82258	9.07704	8.42174	7.84314
30	25.80771	24.01584	22.39646	20.93029	19.60044	17.29203	15.37245	13.76483	12.40904	11.25778	10.27365	9.42691	8.69379	8.05518
40	32.83469	29.91585	27.35548	25.10278	23.11477	19.79277	17.15909	15.04630	13.33171	11.92461	10.75736	9.77905	8.95105	8.24378
50	39.19612	34.99969	31.42361	28.36231	25.72976	21.48218	18.25593	15.76186	13.80075	12.23348	10.96168	9.91481	9.04165	8.30450

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