

When bonds are issued, the borrower records a liability equal to the amount received. If the bonds are issued at a discount—which is the normal case—this liability is smaller than the face value of the bond issue. However, at the maturity date, the issuing corporation must repay the bonds at full face value. As a result of this process, over the term of the bond issue, the borrower's liability gradually increases from the original issue price to the maturity value.

ACCOUNTING FOR A BOND DISCOUNT: AN ILLUSTRATION

To illustrate, assume that on March 1, 2018, Wells Corporation sells \$1 million of 6 percent, 20-year bonds payable to an underwriter at a price of 97 (meaning that the bonds were sold to the underwriter at 97 percent of their face value). On March 1, 2018, Wells Corporation receives \$970,000 cash from the underwriter and records a net liability of this amount ($\$1,000,000 \times 0.97 = \$970,000$). When these bonds mature in 20 years, however, Wells will owe its bondholders the full \$1 million face value of the bond issue. Over the 20-year term of the bonds, the company's liability must be increased by the amount of the discount, or \$30,000 ($\$1,000,000 - \$970,000 = \$30,000$).

The gradual growth in the company's liability is illustrated in Exhibit 10-6. Notice that the liability increases at an average rate of \$1,500 per year ($\$30,000$ total increase \div 20-year life of the bond issue).

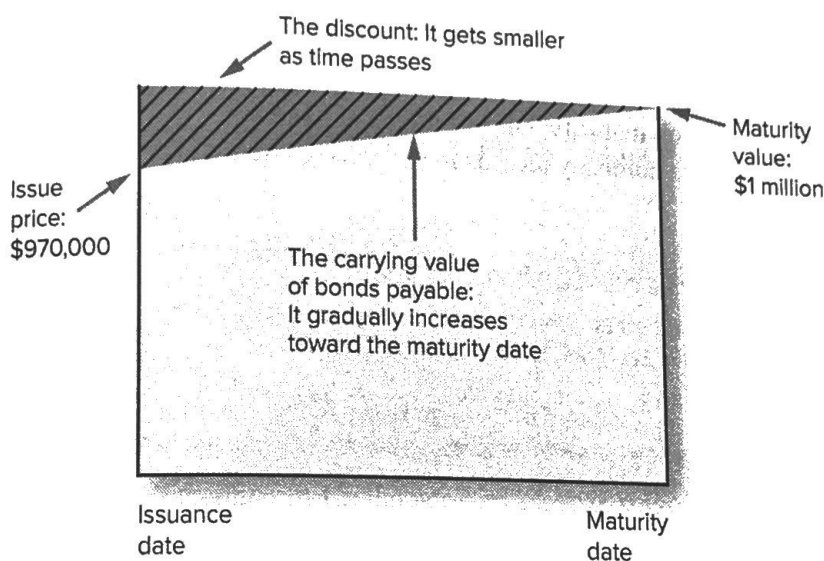


EXHIBIT 10-6
The Carrying Value of a Bond Discount

Bond Discount: Part of the Cost of Borrowing As illustrated, when bonds are issued at a discount, the borrower must repay more than the amount originally borrowed. Any discount in the issuance price becomes an additional cost of the overall borrowing transaction.

In terms of cash outlays, the additional cost represented by the discount is not paid until the bonds mature. But the matching principle generally requires the borrower to recognize this cost gradually over the life of the bond issue.¹¹

When the bonds are issued, the amount of any discount is placed in an account entitled Discount on Bonds Payable. Wells Corporation will record the March 1 issuance as follows.

Cash	970,000
Discount on Bonds Payable	30,000
Bonds Payable	1,000,000
Issued 20-year bonds with \$1,000,000 face value to an underwriter at a price of 97.	

¹¹ If the amount of the discount is immaterial, it may be charged directly to expense as a matter of convenience. In this text, the straight-line method of amortizing bond discounts and premiums is used. The effective interest method is more common and conceptually correct and is covered in more advanced accounting textbooks.

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Wells Corporation's liability at the date of issuance appears in the balance sheet as follows.

Long-Term Liabilities

Bonds payable	\$1,000,000
Less: Discount on bonds payable	30,000
Net carrying value of bonds payable	<u>\$ 970,000</u>

The Discount on Bonds Payable account is treated as a *contra-liability account*. As illustrated, it is shown in the balance sheet as a reduction in the face or par value of bonds payable. The net carrying value of the bonds payable on the date of issuance is equal to the amount borrowed.

Amortization of the Discount On March 1, 2018, Wells Corporation received \$970,000 from the underwriter. When the bonds mature 20 years later on March 1, 2038, the company must pay its bondholders the full \$1 million face value of the bond issue. This \$30,000 represents additional interest expense that is spread (i.e., amortized) over the 20-year life of the bond. At each interest payment date, an adjusting entry is made to transfer a portion of the Discount on Bonds Payable account into interest expense. Over time, the discount declines and the carrying value of the bonds—the face amount less the remaining discount balance—rises toward the \$1 million maturity value of the bond issue.

Each September 1, the company records the following interest expense of \$30,750.

Semiannual interest payment ($\$1,000,000 \times 6\% \times \frac{1}{2}$)	\$30,000
Add: Semiannual amortization of bond discount $[(\$30,000 \text{ discount} \div 20 \text{ years}) \times \frac{1}{2}]$	750
Semiannual interest expense	<u>\$30,750</u>

The entry to record interest expense on September 1 throughout the life of the bond issue is as follows.

Bond Interest Expense	30,750
Cash	30,000
Discount on Bonds Payable	750
To record semiannual interest at 6% plus six months' amortization of the \$30,000 discount on 20-year bonds payable.	

Notice that the amortization of the discount increases Wells Corporation's semiannual interest expense by \$750. It does not, however, require any immediate cash outlay. The interest expense represented by the entire amortized discount will not be paid until the bonds mature on March 1, 2038.

Every December 31, Wells Corporation makes an adjusting entry to record four months' interest expense that has accrued since September 1. The computation of this \$20,500 accrual is computed as follows.

Four months' accrued interest payable ($\$1,000,000 \times 6\% \times \frac{4}{12}$)	\$20,000
Add: Four months' amortization of bond discount $[(\$30,000 \text{ discount} \div 20 \text{ years}) \times \frac{4}{12}]$	500
Interest accrued from September 1 through December 31	<u>\$20,500</u>

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The adjusting entry required each December 31 throughout the life of the bond issue is as follows.

Bond Interest Expense	
Bond Interest Payable	20,500
Discount on Bonds Payable	20,000
To record four months' interest expense and to recognize four months' amortization of the discount on 20-year bonds payable.	500

Two months later, on every March 1, a full semiannual interest payment is made to the company's bondholders, and an additional two months' amortization of the discount is recognized. The \$10,250 interest expense recorded on this date is computed as follows.

Two months' accrued interest payable ($\$1,000,000 \times 6\% \times \frac{2}{12}$)	\$10,000
Add: Two months' amortization of bond discount [$(\$30,000 \text{ discount} \div 20 \text{ years}) \times \frac{2}{12}$]	250
Interest accrued from January 1 through March 1	<u>\$10,250</u>

The semiannual interest payment recorded on March 1 throughout the life of the bond issue is as follows.

Bond Interest Expense	10,250
Bond Interest Payable	20,000
Cash	30,000
Discount on Bonds Payable	250
To record two months' interest expense, to recognize two months' amortization of the discount on 20-year bonds payable, and to record semiannual interest payment to bondholders.	

When the bonds mature 20 years later on March 1, 2038, two entries are required: one to record the regular semiannual interest payment, and a second to record the retirement of the bonds. At this date, the original \$30,000 discount will be fully amortized (that is, the Discount on Bonds Payable account will have a zero balance). The carrying amount of the bond issue will be \$1 million, and the entry required to record the retirement of the bond issue will be as follows.

Bonds Payable	1,000,000
Cash	1,000,000
Paid the face amount of bonds at maturity.	

It is important to realize that over the life of this bond issue, Wells Corporation recognized total interest expense of \$1,230,000 (40 semiannual interest payments of \$30,000, plus the additional \$30,000 discount).

ACCOUNTING FOR A BOND PREMIUM: AN ILLUSTRATION

As noted previously, underwriters normally purchase bonds from the issuing corporation at a discount. Under some circumstances, however, an underwriter may actually pay a slight premium to the issuer—that is, a price above par.

To illustrate, assume that on March 1, 2018, Wells Corporation sells \$1 million of 6 percent, 20-year bonds payable to an underwriter at a price of 103 (meaning that the bonds were sold to the underwriter at 103 percent of their face value). On March 1, 2018, Wells

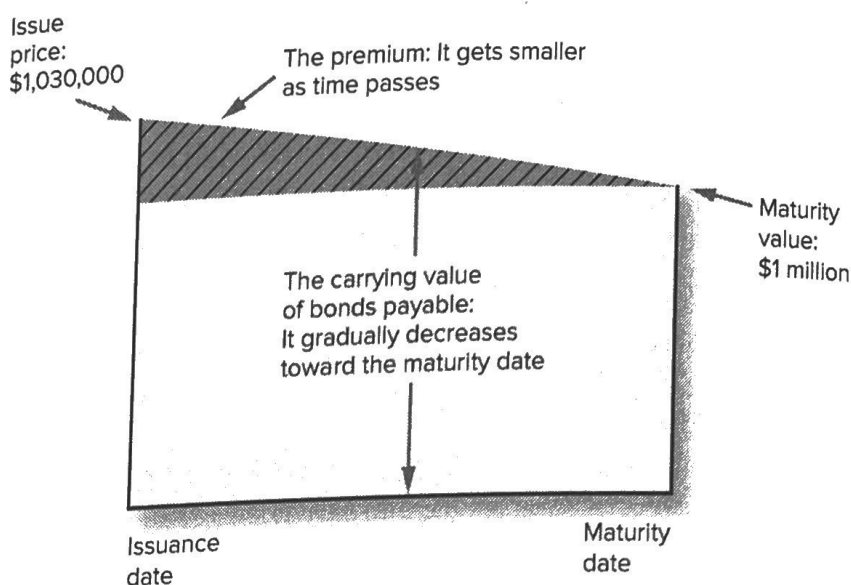
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Corporation receives \$1,030,000 cash from the underwriter ($\$1,000,000 \times 1.03$) and records a liability equal to this amount. When these bonds mature in 20 years, however, Wells will owe its bondholders only the \$1 million face value of the bond issue. The company's initial liability must be reduced by \$30,000 over the 20 years that the bonds are outstanding.

The gradual decrease in the company's liability is illustrated in Exhibit 10-7. Notice that the liability decreases at an average rate of \$1,500 per year ($\$30,000 \text{ total increase} \div 20\text{-year life of the bond issue}$).

EXHIBIT 10-7
The Carrying Value of a Bond Premium



Bond Premium: A Reduction in the Cost of Borrowing When bonds are issued at a premium, the borrower repays less than the amount originally received at the date of issuance. The premium represents a reduction in the overall cost of borrowing. Unlike bonds issued at a discount, the interest expense associated with bonds issued at a premium will be less than the semiannual cash payment made to bondholders.

When the bonds are issued, the amount of any premium is placed in an account entitled Premium on Bonds Payable. Wells Corporation will record the March 1 issuance as follows.

Cash	1,030,000
Premium on Bonds Payable	30,000
Bonds Payable	1,000,000
Issued 20-year bonds with \$1,000,000 face value to an underwriter at a price of 103.	

Wells Corporation's liability at the date of issuance will appear in the balance sheet as follows.

Long-Term Liabilities	
Bonds payable	\$1,000,000
Add: Premium on bonds payable	30,000
Carrying value of bonds payable	<u>\$1,030,000</u>

Note that, because the Premium on Bonds Payable account has a credit balance, it is shown in the balance sheet as an increase in the face or par value of bonds payable.

Amortization of the Premium On March 1, 2018, Wells Corporation received \$1,030,000 from the underwriter. When the bonds mature 20 years later on March 1, 2038,

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the company must pay back its bondholders only the \$1 million face value of the bond issue. This \$30,000 reduction in the amount owed represents interest savings that is amortized over the 20-year life of the bond. Over the 20-year term of the bond, the premium declines, and the carrying value of the bonds—the face amount plus the remaining premium balance—also declines toward the \$1 million maturity value of the bond issue.

Each September 1, the company records interest expense of \$29,250, computed as follows.

Semiannual interest payment ($\$1,000,000 \times 6\% \times \frac{1}{2}$)	\$30,000
Less: Semiannual amortization of bond premium $[(\$30,000 \text{ premium} \div 20 \text{ years}) \times \frac{1}{2}]$	750
Semiannual interest expense	<u>\$29,250</u>

The entry to record interest expense on September 1 throughout the life of the bond issue is as follows.

Bond Interest Expense	29,250	
Premium on Bonds Payable	750	
Cash		30,000
To record semiannual interest expense and to recognize six months' amortization of the \$30,000 premium on 20-year bonds payable.		

Notice that the \$30,000 semiannual interest payment is the same regardless of whether the bonds are issued at face value, at a discount, or at a premium. The amortization of the premium does, however, reduce the amount of interest expense recognized by the company over the life of the bond issue.

Every December 31, Wells Corporation must make an adjusting entry to record four months' interest expense that has accrued since September 1. The \$19,500 accrual is computed as follows.

Four months' accrued interest payable ($\$1,000,000 \times 6\% \times \frac{4}{12}$)	\$20,000
Less: Four months' amortization of bond premium $[(\$30,000 \text{ premium} \div 20 \text{ years}) \times \frac{4}{12}]$	500
Interest accrued from September 1 through December 31	<u>\$19,500</u>

Thus, the following adjusting entry is required on December 31 throughout the life of the bond issue.

Bond Interest Expense	19,500	
Premium on Bonds Payable	500	
Bond Interest Payable		20,000
To record four months' interest expense and to recognize four months' amortization of the premium on 20-year bonds payable.		

Two months later, on every March 1, a full semiannual interest payment is made to the company's bondholders, and an additional two months' amortization of the premium is recognized. The \$9,750 interest expense recorded on this date is computed as follows.

Two months' accrued interest payable ($\$1,000,000 \times 6\% \times \frac{2}{12}$)	\$10,000
Less: Two months' amortization of bond premium $[(\$30,000 \text{ premium} \div 20 \text{ years}) \times \frac{2}{12}]$	250
Interest accrued from January 1 through March 1	<u>\$ 9,750</u>

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The semiannual interest payment recorded on March 1 throughout the life of the bond issue is as follows.

Bond Interest Expense	9,750
Bond Interest Payable	20,000
Premium on Bonds Payable	250
Cash	30,000

To record two months' interest expense, to recognize two months' amortization of the premium on 20-year bonds payable, and to record semiannual interest payment to bondholders.

When the bonds mature 20 years later on March 1, 2038, two entries are required: one to record the regular semiannual interest payment, and a second to record the retirement of the bonds. At this date, the original \$30,000 premium will be fully amortized (that is, the Premium on Bonds Payable account will have a zero balance). The carrying value of the bond issue have been reduced to \$1 million, and the entry required to record the retirement of the bond issue will be as follows.

Bonds Payable	1,000,000
Cash	1,000,000

Paid the face amount of bonds at maturity.

In the previous illustration involving a bond discount, Wells Corporation recognized total interest expense of \$1,230,000 over the life of the bonds. Had these same bonds been issued at a premium of 103, however, we see that the company would have incurred total interest expense of \$1,170,000 (40 semiannual interest payments of \$30,000, less the \$30,000 premium).

BOND DISCOUNT AND PREMIUM IN PERSPECTIVE

From a conceptual point of view, investors might pay a premium price to purchase bonds that pay an above-market rate of interest. If the bonds pay a below-market rate, investors will buy them only at a discount.

But these concepts seldom come into play when bonds are first issued. Most bonds are issued at the market rate of interest. Corporate bonds are rarely issued at a premium. Bonds often are issued at a small discount, but this discount represents only the underwriter's profit margin, not investors' response to a below-market interest rate.¹² The annual effects of amortizing bond discounts or premiums are diluted further because these amounts are amortized over the entire life of the bond issue—usually 20 years or more. We defer further discussion of this topic to more advanced accounting courses.¹³

THE CONCEPT OF PRESENT VALUE

The concept of present value is based on the time value of money—the idea that receiving money today is preferable to receiving money at some future date. Assume, for example, that an investment promises to pay \$1,000 five years from today and will pay no interest in the meantime. Investors would not pay \$1,000 for this opportunity today, because they would receive no return on their investment over the next five years. There is a price less than \$1,000, however, at which investors would be interested. For example, if the investment could be purchased for \$600, the investor could expect a return (interest) of \$400 over the five-year period ($\$1,000 - \$600 = \$400$).

¹² A study of 685 bond issues indicates that none were issued at a premium, and over 95 percent were issued at par or at a discount of less than 2 percent of face value.

¹³ Some companies issue *zero-coupon* bonds, which pay no interest but are issued at huge discounts. In these situations, amortization of the discount is material and may comprise much of the company's total interest expense. Zero-coupon bonds are a specialized form of financing that will be discussed in later accounting courses and courses in corporate finance.

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LEARNING OBJECTIVE

Explain the concept of present value as it relates to bond prices.

The **present value** of a future cash receipt is the amount that a knowledgeable investor will pay today for the right to receive that future payment. The exact amount of the present value depends on (1) the amount of the future payment, (2) the length of time until the payment will be received, and (3) the rate of return required by the investor. However, the present value will always be less than the future amount. This is because money received today can be invested to earn interest and grow to a larger amount in the future.

The rate of interest that will cause a given present value to grow to a given future amount is called the *discount rate* or *effective rate*. The effective interest rate required by investors at any given time is regarded as the going market rate of interest. (The procedures for computing the present value of a future amount are illustrated in Appendix B at the end of this textbook. The concept of present value is useful in managing your personal financial affairs. We suggest that you read Appendix B for your own personal development—even if it has not been assigned.)

The Present Value Concept and Bond Prices The price at which bonds sell is the present value to investors of the future principal and interest payments. If the bonds sell at face value, the market rate is equal to the *contract interest rate* (also referred to as the stated or nominal rate) printed on the bonds. The higher the effective interest rate that investors require, the less they will pay underwriters for bonds with a given contract rate of interest. For example, if investors insist on a 10 percent return, they will pay less than \$1,000 for a 9 percent, \$1,000 bond. In other words, if investors require an effective interest rate greater than the contract rate of interest, the bonds will be sold by underwriters at a *discount* (a price less than their face value). On the other hand, if market conditions support an effective interest rate of less than the contract rate, the bonds will sell at a *premium* (a price above their face value). Since market rates of interest fluctuate constantly, it is reasonable to expect that the contract rate of interest will sometimes vary from the market rate at the date the bonds are issued.

BOND PRICES AFTER ISSUANCE

As stated earlier, many corporate bonds are traded daily on organized securities exchanges at quoted market prices. After bonds are issued, their market prices vary inversely with changes in market interest rates. As interest rates rise, investors will be willing to pay less money to own a bond that pays a given contract rate of interest. Conversely, as interest rates decline, the market prices of bonds rise.

AEL+LOE Bond prices move inversely with market interest rates

CASE IN POINT

This is a historical case on the impact of interest rates on the price of bonds. IBM sold to underwriters \$500 million of 9 $\frac{3}{8}$ percent, 25-year debenture bonds. The underwriters planned to sell the bonds to the public at a price of 99 $\frac{5}{8}$. Just as the bonds were offered for sale, however, a change in Federal Reserve credit policy started an upward surge in interest rates. The underwriters encountered great difficulty selling the bonds. Within one week, the market price of the bonds had fallen to 94 $\frac{1}{2}$. The underwriters dumped their unsold inventory at this price and sustained one of the largest underwriting losses in Wall Street history.

During the months that followed, interest rates soared to record levels. Within five months, the price of the bonds had fallen to 76 $\frac{3}{8}$. As a result, nearly one-fourth of the market value of these bonds evaporated in less than half a year. At this time, the financial strength of IBM was never in question; this dramatic loss in market value was caused entirely by rising interest rates.

Changes in the current level of interest rates are not the only factors influencing the market prices of bonds. The length of time remaining until the bonds mature is another major force. As a bond nears its maturity date, its market price normally moves closer and closer to the maturity value. This trend is dependable because the bonds are redeemed at face value on the maturity date.

Volatility of Short-Term and Long-Term Bond Prices When interest rates fluctuate, the market prices of long-term bonds are affected to a far greater extent than the market prices of bonds due to mature in the near future. To illustrate, assume that market interest rates

suddenly soar from 6 percent to 9 percent. A 6 percent bond scheduled to mature in a few days will still have a market value of approximately \$1,000—the amount to be collected in a few days from the issuing corporation. However, the market price of a 6 percent bond maturing in 10 years will drop significantly. Investors who must accept these below-market interest payments for many years will buy the bonds only at a discounted price.

In summary, fluctuations in interest rates have a far greater effect on the market prices of long-term bonds than on the prices of short-term bonds.

Remember that, after bonds have been issued, they belong to the bondholder, not to the issuing corporation. Therefore, changes in the market price of bonds subsequent to their issuance do not affect the amounts shown in the financial statements of the issuing corporation, and these changes are not recorded in the company's accounting records.



YOUR TURN

You as a Financial Advisor

Assume that you are the financial advisor for a recently retired investor. Your client wants to invest her savings in such a way as to receive a stable stream of cash flow every year throughout her retirement. She has expressed concern to you regarding the volatility of long-term bond prices when interest rates fluctuate.

If your client invests her savings in a variety of long-term bonds and holds these bonds until maturity, will interest rate fluctuations affect her annual cash flow during her retirement years?

(See our comments in Connect.)

EARLY RETIREMENT OF BONDS PAYABLE

Bonds are sometimes retired before the maturity date. The principal reason for retiring bonds early is to relieve the issuing corporation of the obligation to make future interest payments. If interest rates decline to the point that a corporation can borrow at an interest rate below that being paid on an outstanding bond issue, the corporation may benefit from retiring those bonds early and issuing new bonds at a lower interest rate.

Most bond issues contain a call provision that permits the corporation to redeem the bonds by paying a specified price, usually a few points above face value. Even without a call provision, the corporation may retire its bonds before maturity by purchasing them in the open market. If the bonds can be purchased by the issuing corporation at less than their carrying value, a *gain* is realized on the retirement of the debt. If the bonds are reacquired by the issuing corporation at a price in excess of their carrying value, a *loss* must be recognized.

For example, assume that Briggs Corporation has outstanding a 6 percent, \$10 million bond issue, callable on any interest date at a price of 102. Assume also that the bonds were issued at par and will not mature for nine years. Recently, however, market interest rates have declined to less than 5 percent, and the market price of Briggs's bonds has increased to 106.¹⁴

Regardless of the market price, by prior agreement Briggs can call these bonds at 102. If the company exercises this call provision for 10 percent of the bonds (\$1,000,000 face value), the entry will be as follows.

Bonds Payable	1,000,000
Loss on Early Retirement of Bonds	20,000
Cash	1,020,000
To record the call of \$1 million in bonds payable at a call price of 102.	

¹⁴ Falling interest rates cause bond prices to rise. On the other hand, falling interest rates also provide the issuing company with an incentive to call the bonds and, perhaps, replace them with bonds bearing a lower rate of interest. For this reason, call prices often serve as an approximate "ceiling" on market prices.

Notice that Briggs called these bonds, rather than repurchasing them at market prices. Therefore, Briggs is able to retire these bonds at their call price of 102. (Had the market price of the bonds been below 102, Briggs might have been able to retire the bonds at less cost by purchasing them in the open market.)

Estimated Liabilities, Loss Contingencies, and Commitments

ESTIMATED LIABILITIES

The term *estimated liabilities* refers to liabilities that appear in financial statements at estimated dollar amounts. An example is an automaker's liability to honor its new car warranties. A manufacturer's liability for warranty work is recorded by recording both Warranty Expense and a Liability for Warranty Claims. The matching principle requires that the expense of performing warranty work be recognized in the period in which the products are sold, in order to offset this expense against the related sales revenue. As the warranty may extend several years into the future, the dollar amount of this liability (and expense) must be estimated. Because of the uncertainty regarding when warranty work will be performed, accountants traditionally have classified the liability for warranty claims as a current liability.

By definition, estimated liabilities involve some degree of uncertainty. However, when the following conditions are met, a liability is recognized and becomes a part of the company's financial statements: (1) the liabilities are known to exist, and (2) the uncertainty as to dollar amount is not so great as to prevent the company from making a reasonable estimate and recording the liability.

LOSS CONTINGENCIES

Loss contingencies are similar to estimated liabilities but may involve even more uncertainty. A loss contingency is a possible loss, stemming from past events, that is expected to be resolved in the future.

Central to the definition of a loss contingency is the element of *uncertainty*—uncertainty as to the amount of loss and, in some cases, uncertainty as to whether or not any loss actually has been incurred. A common example of a loss contingency is a lawsuit pending against a company. The lawsuit is based on past events, but until the suit is resolved, uncertainty exists as to whether the company has sustained a loss and, if it has, how much was that loss.

Loss contingencies differ from estimated liabilities in two ways. First, a loss contingency may involve a greater degree of uncertainty. Often the uncertainty extends to whether any loss or expense actually has been incurred. In contrast, the loss or expense relating to an estimated liability is known to exist.

Second, the concept of a loss contingency extends not only to possible liabilities but also to possible impairments of assets. Assume, for example, that a bank has made large loans to a foreign country now experiencing political instability. Uncertainty exists as to the amount of loss, if any, associated with this loan. From the bank's point of view, this loan is an asset that may be impaired, not a liability.

Loss Contingencies in Financial Statements The manner in which loss contingencies are presented in financial statements depends on the degree of uncertainty involved.

Loss contingencies are recorded in the accounting records only when both of the following criteria are met: (1) It is probable that a loss has been incurred, and (2) the amount of loss can be reasonably estimated. An example of a loss contingency that usually meets these criteria and is recorded in the accounts is the obligation a company has for product warranties and defects.

When these criteria are *not* met, loss contingencies are not formally recorded, but rather are disclosed in notes to the financial statements if there is a reasonable possibility that a material loss has been incurred. Pending lawsuits, for example, usually are disclosed in notes accompanying the financial statements, but the loss, if any, is not recorded in the accounting records until the lawsuit is settled. Companies are not required to disclose loss contingencies if the risk of a material loss having occurred is considered remote.

LO10-8

LEARNING OBJECTIVE

Explain how estimated liabilities, loss contingencies, and commitments are disclosed in financial statements.

Notice the judgmental nature of the criteria used in accounting for loss contingencies. These criteria involve assessments as to whether the risk of material loss is “probable,” “reasonably possible,” or “remote.” The collective professional judgment of the company’s management, accountants, legal counsel, and auditors is the deciding factor in accounting for loss contingencies. Loss contingencies relate only to possible losses from past events. The risk that losses may result from future events is not a loss contingency.

When loss contingencies are disclosed in notes to the financial statements, the note should describe the nature of the contingency and, if possible, provide an estimate of the amount of possible loss. If a reasonable estimate of the amount of possible loss cannot be made, the disclosure should include the range of possible loss or a statement that an estimate cannot be made. The following note is typical of the disclosure of the loss contingency arising from pending litigation.

Note 8: Contingencies

In October of 2018, the Company was named as defendant in a \$250 million patent infringement lawsuit. The Company denies all charges and is preparing its defense against them. It is not possible at this time to determine the ultimate legal or financial responsibility that may arise as a result of this litigation.

Note disclosure of a loss contingency

Sometimes a portion of a loss contingency qualifies for immediate recognition, whereas the remainder only meets the criteria for disclosure. Assume, for example, that a company is required by the Superfund Act to clean up an environmental hazard over a 10-year period. The company cannot predict the total cost of the project but considers it probable that it will cost at least \$1 million. The company should recognize a \$1 million expected loss and record it as a liability. In addition, it should disclose in the notes to the financial statements that the actual cost ultimately may exceed the recorded amount.

COMMITMENTS

Contracts for future transactions are called **commitments**. They are not liabilities, but, if material, they are disclosed in notes to the financial statements. For example, a professional baseball club may issue a three-year contract to a player at an annual salary of \$8 million. This is a commitment to pay for services to be rendered in the future. There is no obligation to make payment until the services are received. As liabilities stem only from past transactions, this commitment has not yet created a liability.

Other examples of commitments include a corporation’s long-term employment contract with a key officer, a contract for construction of a new plant, and a contract to buy or sell inventory at future dates. The common quality of all these commitments is an intent to enter into transactions in the future. Commitments that are material in amount should be disclosed in notes to the financial statements.

Evaluating the Safety of Creditors’ Claims

Creditors, of course, want to be sure that their claims are safe—that is, that they will be paid on time. Actually, everyone associated with a business—management, owners, employees—should be concerned with the company’s ability to pay its debts. If a business becomes illiquid (unable to pay its obligations), it may be forced into **bankruptcy**.¹⁵

Not only does management want the business to remain liquid, but it also wants the company to maintain a high credit rating with agencies such as **Moody’s** and **Standard & Poor’s**. A high credit rating helps a company borrow money more easily and at lower interest rates.

In evaluating debt-paying ability, short-term creditors and long-term creditors look at different relationships. Short-term creditors are interested in the company’s immediate liquidity. Long-term creditors, in contrast, are interested in the company’s ability to meet its interest

¹⁵ Bankruptcy is a legal status under which the company’s fate is determined largely by the U.S. Bankruptcy Court. Sometimes the company is reorganized and allowed to continue its operations. In other cases, the business is closed and its assets are sold. Often managers and other employees lose their jobs. In almost all bankruptcies, the company’s creditors and owners incur legal costs and sustain financial losses.

LO10-9

LEARNING OBJECTIVE
Evaluate the safety of
creditors’ claims.

Evaluating the Safety of Creditors' Claims

obligations over a period of years, as well as its ability to repay or refinance large obligations as they come due.

In previous chapters we introduced several measures of short-term liquidity and long-term credit risk. These measures are summarized in Exhibit 10-8—along with the interest coverage ratio, which is discussed as follows.

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METHODS OF DETERMINING CREDITWORTHINESS

Interest Coverage Ratio Creditors, investors, and managers all feel more comfortable when a company has enough income to cover its interest payments by a wide margin. One widely used measure of the relationship between earnings and interest expense is the **interest coverage ratio**, which is sometimes referred to as *times interest earned*.

The interest coverage ratio is computed by dividing operating income by the annual interest expense. From a creditor's point of view, the higher this ratio, the better. In past years, most companies with good credit ratings had interest coverage ratios of, perhaps, 4 to 1 or more.

Less Formal Means of Determining Creditworthiness Not all decisions to extend credit involve formal analysis of the borrower's financial statements. Most suppliers of goods or services, for example, will sell on account to almost any long-established business—unless they know the customer is in severe financial difficulty. If the customer is not a well-established business, these suppliers may investigate the customer's credit history by contacting a credit-rating agency.

In lending to small businesses organized as corporations, lenders may require key stockholders to personally guarantee repayment of the loan.

HOW MUCH DEBT SHOULD A BUSINESS HAVE?

All businesses incur some debts as a result of normal business operations. These include, for example, accounts payable and accrued liabilities. But many businesses aggressively use long-term debt, such as mortgages and bonds payable, to finance growth and expansion. Is this wise? Does it benefit the stockholders? The answer hinges on another question: Can the borrowed funds be invested to earn a return higher than the rate of interest paid to creditors?

Using borrowed money to finance business operations is called applying **leverage**. Extensive use of leverage—that is, a great deal of debt—sometimes benefits a business dramatically. But there are potential negative consequences.

If borrowed money can be invested to earn a rate of return higher than the interest rates paid to the lenders, net income and the return on stockholders' equity will increase.¹⁶ For example, if you borrow money at an interest rate of 6 percent and invest it to earn 10 percent, you will benefit from "the spread."

But leverage is a double-edged sword—the effects may be favorable or unfavorable. If the rate of return earned on the borrowed money falls below the rate of interest being paid, the use of borrowed money reduces net income and the return on equity. Companies with large amounts of debt sometimes become victims of their own debt-service requirements.

The effects of leverage may be summarized as follows.

Relationship of Return on Assets to Interest Rate on Borrowed Funds	Effect on Net Income and Return on Equity
Return on Assets > Interest Rates Being Paid	Increase
Return on Assets < Interest Rates Being Paid	Decrease

The more leverage a company applies, the greater the effects on net income and the return on equity. Using more leverage simply means having more debt. Therefore, the *debt ratio* is a basic measure of the amount of leverage being applied.

¹⁶ The rate of return earned on invested capital usually is viewed as the overall *return on assets*—that is, operating income divided by average total assets. *Return on equity* is net income expressed as a percentage of average stockholders' equity. Both of these return on investment measures are discussed in Chapter 14.



PATHWAYS CONNECTION

Recall in the Pathways Model that was presented in Chapter 1, and has been referred to consistently since then, that an important goal of accounting is providing useful information for making sound decisions. You also have learned that significant judgment is required to prepare financial information and

to make wise use of that information. These principles are clearly demonstrated in accounting for liabilities.

Exhibit 10–8 provides a summary of some of the common measures used by creditors and investors to evaluate a company's short-term and long-term debt-paying ability.

EXHIBIT 10–8 Measures of Debt-Paying Ability

Short-Term	Long-Term
Quick ratio—Most liquid assets divided by current liabilities; a stringent measure of liquidity.	Debt ratio—Total liabilities divided by total assets. Measures percentage of capital structure financed by creditors.
Current ratio—Current assets divided by current liabilities; the most common measure of liquidity, but less stringent than the quick ratio.	Interest coverage ratio—Operating income divided by interest expense. Shows how many times the company earns its annual interest obligations.
Working capital—Current assets less current liabilities; the “uncommitted” liquid resources.	Trend in net cash flows from operating activities—Indicates trend in cash-generating ability. Determined from comparative statements of cash flows.
Turnover rates—Measures of how quickly receivables are collected or inventory is sold. (Computed separately for receivables and inventory.)	Trend in net income—Less related to debt-paying ability than cash flow, but still an excellent measure of long-term financial health.
Operating cycle—The period of time required to convert inventory into cash.	
Net cash flows from operating activities—Measures a company's ability to generate cash. (Shown in the statement of cash flows.)	
Lines of credit—Indicates ready access to additional cash should the need arise.	



YOUR TURN

You as a Credit Analyst

Assume that you are a credit analyst at a bank. Welch, Inc. wants to borrow from your bank on a short-term basis. You assign the task of reviewing Welch's short-term creditworthiness to a college intern working for your bank. The intern remembers that working capital (current assets minus current liabilities) and the current ratio (current assets divided by current liabilities) are useful tools for evaluating short-term liquidity. Selected financial information is as follows (all items are in millions).

	Recent Year	Prior Year
Cash and cash equivalents	\$12,000	\$14,000
Short-term investments	200	975
Accounts receivable (net)	6,600	6,500
Financing receivables	3,200	3,300
Inventories	1,400	1,400
Other current assets	4,000	3,400
Total current liabilities	23,500	22,000
Cash provided by operations	3,300	5,500
Net income	2,400	3,500

The intern is concerned about lending money to Welch because working capital for the most recent year is \$3,900 million.

As a result, Welch's current ratio is only 1.17 for the recent year. Do you agree with the intern's assessment?

(See our comments in Connect.)



ETHICS, FRAUD, & CORPORATE GOVERNANCE

One of the most infamous financial frauds in U.S. history occurred at Enron and was revealed in the fall of 2001. A major part of the Enron fraud involved the understatement of debt. Enron understated its debt by at least \$550 million each year from 1997 to 2000. Enron's management was motivated to understate debt in order to maintain a high credit rating from Moody's and Standard & Poor's.

Enron was engaged in the energy business and was also a trader of contracts to buy and sell commodities. At the time of the fraud, Enron was traded on the New York Stock Exchange. The revelation of the financial improprieties at Enron in October 2001 ultimately led to a collapse in Enron's credit rating. Without access to ongoing financing, Enron was forced to file for bankruptcy in December 2001. At the time of Enron's bankruptcy filing, it was the seventh-largest corporation in the United States.

Enron understated its liabilities by transferring debt to **special purpose entities (SPEs)**. SPEs are separate entities established by corporations to accomplish specific purposes. Often, the economic objective of an SPE is to borrow money and then transfer it to the sponsoring corporation without the sponsoring corporation having to report the SPE's debt in its balance sheet.

These SPEs were organized as partnerships, and Enron's chief financial officer, Andrew Fastow, was the managing general partner of a number of them. Fastow and other Enron employees were among the parties providing equity capital to the SPEs. Enron guaranteed these investors that they would not

only get back what they had invested, but that they would also receive substantial returns.

The fraud at Enron has numerous ethical and corporate governance implications. Given the complexity of Enron's fraudulent activity, it could not have been accomplished without the cooperation of outside professionals (e.g., attorneys, auditors, credit rating agencies, and investment bankers). The external auditor, Arthur Andersen, issued unqualified audit opinions on Enron's financial statements despite severe doubt that Enron's filings conformed with generally accepted accounting principles. Credit rating agencies maintained investment grade credit ratings on Enron's debt throughout the entire period of the fraud and did not downgrade Enron's debt until a few weeks before the bankruptcy filing. Finally, major Wall Street investment banks created the SPE structures, including numerous transactions that resulted in debt being transferred from Enron's books to the SPEs.

The unethical conduct of Enron's outside professionals has not been without severe consequences. Arthur Andersen was convicted of a felony for its role in shredding its working papers related to the Enron audit. The felony indictment and conviction led to the dissolution of this former large, international accounting firm. A number of major Wall Street investment banks have paid the U.S. government multimillion-dollar settlements stemming from their Enron involvement.

Special Types of Liabilities

The types of liabilities discussed up to this point have been those short-term and long-term obligations encountered by most organizations. Here we examine three special types of liabilities most common to large organizations: (1) leases, (2) postretirement benefits, and (3) deferred taxes.

LEASE PAYMENT OBLIGATIONS

A company may purchase the assets needed in its business operations or, as an alternative, it may lease them. A *lease* is a contract in which the lessor gives the lessee the right to use an asset for a specified period of time in exchange for periodic rental payments. The **lessor** is the owner of the property; the **lessee** is a tenant or renter. Examples of assets frequently acquired by lease include automobiles, building space, computers, and equipment. The FASB has recently issued a standard that will significantly change accounting for leases, including the terminology used. In the following sections of this chapter, we retain the current terminology of operating and capital leases because of their widespread use in practice and the relatively long transition period to the new standard. The replacement terminology is shown in parentheses following the operating and capital lease terminology.

OPERATING LEASES

When the lessor transfers to the lessee the right to use leased property for a limited period of time, but retains the usual risks and rewards of ownership, the contract is known as an **operating lease (Type B lease)**. An example of an operating lease is a contract leasing office space in an office building. If the building increases in value, the lessor can receive the benefits of this increase by either selling the building or increasing the rental rate once the initial lease term has expired. Likewise, if the building declines in value, the lessor bears the loss.

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LEARNING OBJECTIVE

Describe reporting issues related to leases, postretirement benefits, and deferred taxes.

In accounting for an operating lease, the lessee treats the lease payments as rental expense and the lessor accounts for the lease payments as rental revenue. No asset or liability (other than a short-term liability for accrued rent payable) relating to the lease appears in the lessee's balance sheet. For this reason, operating leases are sometimes referred to as **off-balance sheet financing** and disclosure is required of the amounts due in each of the next five years, plus the balance thereafter.

CAPITAL LEASES

Some lease contracts are intended to provide financing to the lessee for the eventual purchase of the property or to provide the lessee with use of the property over most of its useful life. A lease contract of this type is called a **capital lease (Type A lease)**. In contrast to an operating lease, a capital lease transfers most of the risks and rewards of ownership from the lessor to the lessee.

From an accounting viewpoint, capital leases are regarded as equivalent to a sale of the property by the lessor to the lessee, even though title to the leased property has not been transferred. A capital lease is recorded as a purchase by the lessee and as a sale of property by the lessor.

For example, when equipment is acquired through a capital lease, the lessee debits an asset account, Leased Equipment (or Right to Use Asset under the new FASB standard), and credits a liability account, Lease Payment Obligation, for the present value of the future lease payments. Lease payments made by the lessee are allocated between Interest Expense and a reduction in the liability Lease Payment Obligation. The portion of the lease payment obligation that will be repaid within the next year is classified as a current liability, and the remainder is classified as long term.

No rent expense is recorded by the lessee in a capital lease. The asset account Leased Equipment is depreciated by the lessee over the estimated useful life of the equipment or the length of the lease term, depending on the circumstances surrounding the capitalization of the lease. Disclosure of future payments on the lease is also required. Accounting for capital leases is illustrated in Appendix B at the end of this textbook and is covered in greater depth in more advanced accounting classes.

Distinguishing between Capital Leases and Operating Leases The Financial Accounting Standards Board (FASB) has identified certain criteria that qualify a lease as a capital lease. For example, if the lease transfers ownership of the property to the lessee at the end of the lease term, the lease is a capital lease. Similarly, if the lease term is equal to 75 percent or more of the estimated economic life of the leased property, the lease is a capital lease. Leases that do not meet any of specified criteria are accounted for as operating leases.

LIABILITIES FOR PENSIONS AND OTHER POSTRETIREMENT BENEFITS

Many employers agree to pay their employees a pension: that is, monthly cash payments for life, beginning at retirement. Pensions are not an expense of the years in which cash payments are made to retired workers. Employees earn the right to receive the pension while they are working for their employer. Therefore, the employer's cost of future pension payments accrues over the years that each employee is on the payroll.

The amounts of the retirement benefits that will be paid to today's workers after they retire are not known with certainty. Among other things, these amounts depend on how long retired employees live. Therefore, the employer's obligation for future pension payments arising during the current year must be estimated.

Employers do not usually pay retirement pensions directly to retired employees. Most employers meet their pension obligations by making periodic payments to a **pension fund** (or pension plan) throughout the years of each worker's employment. That fund then pays retirement benefits directly to retirees.

A pension fund is an independent entity managed by a trustee (usually a bank or an insurance company). As the employer makes payments to the pension fund, the trustee invests the money in securities such as stocks and bonds. Over time, the pension fund earns investment income and normally accumulates to a balance far in excess of the employer's deposits. The pension fund—not the employer—disburses monthly pension benefits to retired workers.

If the employer meets all of its estimated pension obligations by promptly paying cash in a pension fund, the pension fund is said to be fully funded. If a pension plan is fully funded, no liability for pension payments appears in the employer's balance sheet. The employer's obligation

Special Types of Liabilities

is discharged in the current period through the payments made to the pension fund. The employer records each payment to this fund by debiting Pension Expense and crediting Cash.

Determining Pension Expense From a conceptual point of view, the pension expense of a given period is the *present value* of the future pension rights granted to employees as a result of their services during the period. The computation of annual pension expense is complex and involves many assumptions. The amount of this expense is computed not by accountants, but rather by an **actuary**, who considers factors like the following.

- Average age, retirement age, and life expectancy of employees.
- Employee turnover rates.
- Compensation levels and estimated rate of pay increases.
- Expected rate of return to be earned on pension fund assets.

For example, assume that the actuarial firm of Gibson & Holt computes a pension expense for Cramer Cable Company of \$450,000 for the current year. This amount represents the present value of pension rights granted to Cramer's employees for the work they performed during the year. To fully fund this obligation, Cramer transfers \$450,000 to National Trust Co., the trustee of the company's pension plan.

The following entry summarizes Cramer's fully funded pension expense for the year.

Pension Expense	
Cash	450,000
Pension expense for the year as determined by actuarial firm of Gibson & Holt; fully funded by payments to National Trust Co.	450,000

Postretirement Benefits Other Than Pensions In addition to pension plans, many companies have promised their employees other types of **postretirement benefits**, such as continuing health insurance. In most respects, these nonpension postretirement benefits are accounted for in the same manner as are pension benefits. Many companies, however, do not fully fund their obligations for nonpension postretirement benefits. Recognition of the annual expense often includes a credit to an unfunded liability for part of the cost.

Continuing with our illustration of Cramer Cable Company, assume that Gibson & Holt computes for the company a \$185,000 nonpension postretirement benefits expense for the current year. Unlike its pension expense, however, Cramer does *not* fully fund its nonpension obligations.

If only 60 percent of the \$185,000 expense was funded, the entry to summarize this expense for the year is as follows.

Postretirement Benefits Expense	185,000
Cash	111,000
Unfunded Liability for Postretirement Benefits	74,000
To record nonpension postretirement benefits expense per report of Gibson & Holt, actuaries; expense funded to the extent of \$111,000.	

The portion of the unfunded liability that the company expects to fund during the next year is classified as a *current liability*; the remainder is classified as a *long-term liability*.

Unfunded Postretirement Costs Are Noncash Expenses Postretirement costs are recognized as expenses as workers earn the right to receive these benefits. If these costs are fully funded, the company makes cash payments to a trustee within the current period equal to this expense. But if these benefits are not funded, the cash payments are not made until after the employees retire.

Unfunded retirement benefits often are called a noncash expense. That is, the expense is charged against current earnings, but there are no corresponding cash payments in the period. In the previous illustration, notice that the expense exceeds the cash outlays by \$74,000 (\$185,000 - \$111,000). This amount corresponds to the growth in the unfunded liability.

Unfunded Liabilities for Postretirement Costs: Are They Significant Amounts?

Many of America's largest and best-known corporations have obligations for unfunded postretirement benefits that are large relative to their total assets and other liabilities. Here are several things to consider in evaluating a company's ability to pay its unfunded liability for postretirement costs. First, this liability represents only the present value of the estimated future payments. The future payments are expected to be substantially more than the amount shown in the balance sheet. Next, this liability may continue to grow, especially if the company has more employees today than in the past. On the other hand, this liability does not have to be paid all at once. It will be paid over a great many years—the life span of today's workforce.

In evaluating a company's ability to meet its postretirement obligations, we suggest looking to the statement of cash flows in addition to the balance sheet and income statement. In the statement of cash flows, payments of postretirement costs are classified as operating activities. If a company has a steadily increasing net cash flow from operating activities, it is in a stronger position to handle retirement costs as they come due. But if the net cash flow from operating activities starts to decline, the company may have no choice but to reduce the benefits it provides to retired employees. Often these benefits are not contractual and can be reduced at management's discretion.

DEFERRED INCOME TAXES

We have learned in earlier chapters that certain differences exist between the way some revenues or expenses are recognized in financial statements and the way these same items are reported in income tax returns. For example, most companies use the straight-line method of depreciation in their financial reports but use an accelerated method in their income tax returns. Because of such differences between accounting principles and tax rules, income appearing in the income statement today may not be subject to income taxes until future years. However, the matching principle requires that the income shown in an income statement be offset by all related income taxes expense, regardless of when these taxes will be paid. The entry to record a corporation's income tax expense might appear as follows, assuming that \$200,000 of the current-year income tax expense is deferred to future years.

A=L+LOE

Payment of income taxes expense often can be deferred

Income Tax Expense	1,000,000	
Income Tax Payable		800,000
Deferred Income Taxes		200,000
To record corporate income taxes applicable to the income of the current year.		

Income Tax Payable is a current liability representing the portion of the income taxes expense that must be paid when the company files its income tax return for the most recent year. The portion of income taxes expense that is deferred to future tax returns is credited to a liability account entitled **Deferred Income Taxes**, which is treated as a noncurrent liability. Accounting for deferred income taxes involves a number of complex issues that are addressed in more advanced accounting courses.

Concluding Remarks

Other than profitable operations, businesses have two basic sources of financing their assets: liabilities and owners' equity. Throughout this chapter, we have studied current liabilities, long-term liabilities, and estimated liabilities common to most large businesses. We have learned that liabilities differ from owners' equity in several respects. The feature that most clearly distinguishes the claims of creditors from those of owners is that virtually all liabilities eventually mature and become due. We have also learned that the claims of creditors have legal priority over the claims of owners.

In the next two chapters, we turn our attention to owners' equity. We examine many important topics including treasury stock transactions, cash dividends, stock dividends, stock splits, and the differences between common and preferred stockholders.