Chapter 15

Long-Term Liabilities

STUDY OBJECTIVES

After studying this chapter, you should be able to:

1. Explain why bonds are issued.
2. Prepare the entries for the issuance of bonds and interest expense.
3. Describe the entries when bonds are redeemed or converted.
4. Describe the accounting for long-term notes payable.
5. Contrast the accounting for operating and capital leases.
6. Identify the methods for the presentation and analysis of long-term liabilities.

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- Scan **Study Objectives**
- Read **Feature Story**
- Read **Preview**
- Read text and answer DO IT! p. 648 p. 652 p. 654 p. 656 p. 659
- Work **Comprehensive** DO IT! p. 660
- Review **Summary of Study Objectives**
- Answer **Self-Study Questions**
- Complete **Assignments**

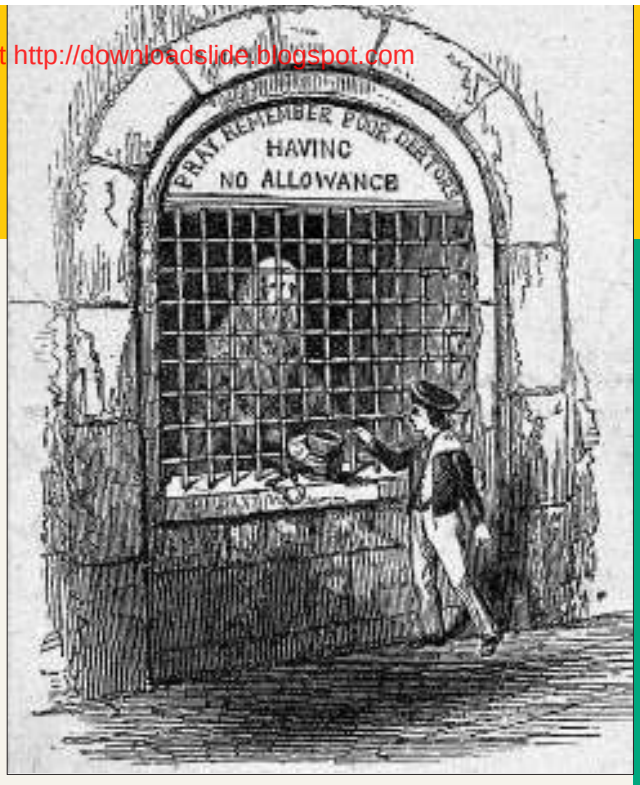
Feature Story

THANK GOODNESS FOR BANKRUPTCY

One piece of baggage America's first settlers carried with them from England was the belief that not repaying one's debts was a moral failure. As in England, the colonists' penalty for such wickedness was often prison.

The theory behind jailing debtors was that the threat of incarceration might persuade them to reveal hidden assets. Or their families might take pity and pay their ransom. But if the debtor was truly penniless, he could be sentenced to what amounted to life in prison. Unlike murderers, rapists, and thieves, the debtors were also responsible for paying their own upkeep, thus putting them even further into debt. . . .

The colonies gradually developed more forgiving laws on debt, recognizing that owing money could be the result of bad luck rather than evidence of fraud or indolence. "Crops fail, prices fall, ships sink, warehouses burn, owners die, partners steal, pirates pillage, wars ravage, and people simply



make mistakes," wrote Bruce Mann in his 2002 book *Republic of Debtors*. "Failure was the down side of entrepreneurial risk. This made failure the potential common fate of all merchants." . . .

Colonial lawmakers began taking a more charitable view toward debtors, but they were likelier to excuse a rich defaulter than a poor one. . . . Indeed, when some large speculative financial schemes collapsed after the Revolutionary War, many wealthy men were suddenly bankrupt. One of them, Robert Morris, who had signed the Declaration of Independence and provided critical financing for the war, lost his fortune speculating on land. Sentenced to debtors' prison in Philadelphia, Morris rented the best room in the jail and outfitted it with a settee, writing desks, a bed, a trunk of clothes and other comforts of home.

However lavishly they could outfit their prison cells, though, rich and poor faced the same dim future. There was no way an insolvent could get a fresh start—the "holy grail of debt relief," as Mr. Mann put it. In prison or out, debtors were expected to repay every penny they owed their creditors, even if it took them the rest of their lives. . . .

Congress passed a bankruptcy law in 1800 but then repealed it three years later. Not until 1831 did New York abolish prison for most debtors; Pennsylvania kept its debtors' prisons open until 1842. . . .

Source: Excerpted from Cynthia Crossen, "Early Debtors Faced Jail at Own Expense Until All Was Repaid," *Wall Street Journal*, January 30, 2006, p. B1. By permission.

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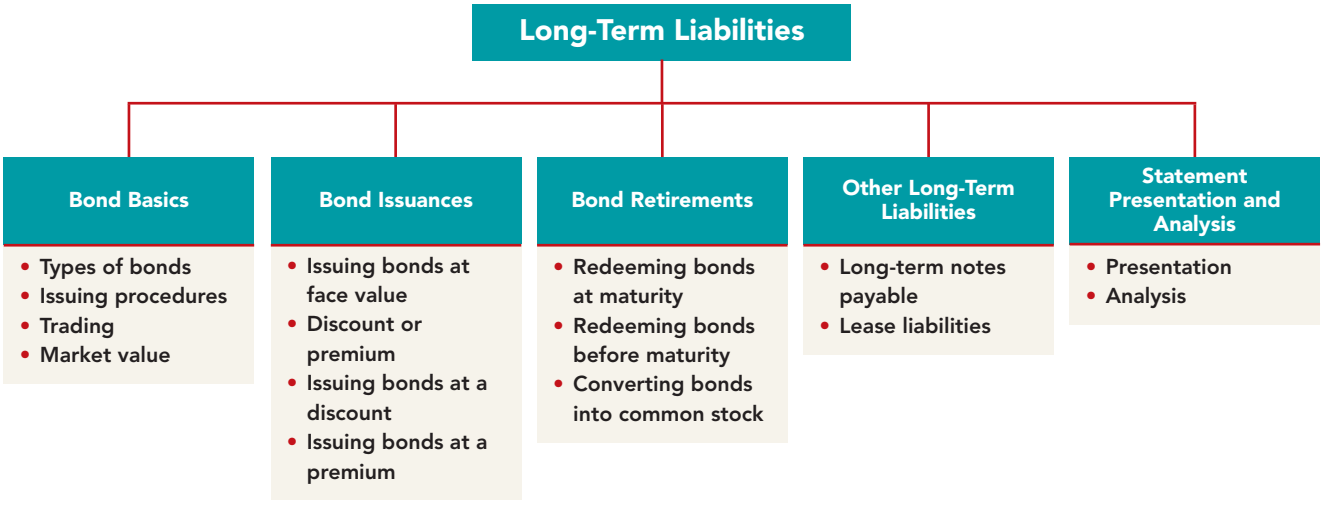
Inside Chapter 15...

Preview of Chapter 15

As you can see from the Feature Story, having liabilities can be dangerous in difficult economic times. In this chapter we will explain the accounting for the major types of long-term liabilities reported on the balance sheet. **Long-term liabilities** are obligations that are expected to be paid after one year. These liabilities may be bonds, long-term notes, or lease obligations.

The content and organization of Chapter 15 are as follows.



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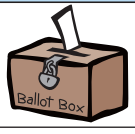
BOND BASICS

STUDY OBJECTIVE 1
Explain why bonds are issued.

Bonds are a form of interest-bearing notes payable. To obtain **large amounts of long-term capital**, corporate management usually must decide whether to issue common stock (equity financing) or bonds. Bonds offer three advantages over common stock, as shown in Illustration 15-1.

Illustration 15-1
Advantages of bond financing over common stock

Bond Financing	Advantages
	1. **Stockholder control is not affected.** Bondholders do not have voting rights, so current owners (stockholders) retain full control of the company.
	2. **Tax savings result.** Bond interest is deductible for tax purposes; dividends on stock are not.
	3. **Earnings per share may be higher.** Although bond interest expense reduces net income, earnings per share on common stock often is higher under bond financing because no additional shares of common stock are issued.

As the illustration shows, one reason to issue bonds is that they do not affect stockholder control. Because bondholders do not have voting rights, owners can raise capital with bonds and still maintain corporate control. In addition, bonds are attractive to corporations because the cost of bond interest is tax-deductible. As a result of this tax treatment, which stock dividends do not offer, bonds may result in lower cost of capital than equity financing.

To illustrate the third advantage, on earnings per share, assume that Microsystems, Inc. is considering two plans for financing the construction of a new $5 million plant. Plan A involves issuance of 200,000 shares of common stock at the current market price of $25 per share. Plan B involves issuance of $5 million, 8% bonds at face value. Income before interest and taxes on the new plant will be $1.5 million. Income taxes are expected to be 30%. Microsystems currently has 100,000 shares of common stock outstanding. Illustration 15-2 shows the alternative effects on earnings per share.

Illustration 15-2
Effects on earnings per share—stocks vs. bonds

	Plan A Issue Stock	Plan B Issue Bonds
Income before interest and taxes	$1,500,000	$1,500,000
Interest (8% × $5,000,000)	—	400,000
Income before income taxes	1,500,000	1,100,000
Income tax expense (30%)	450,000	330,000
Net income	$1,050,000	$ 770,000
Outstanding shares	300,000	100,000
Earnings per share	**$3.50**	**$7.70**

Note that net income is $280,000 less ($1,050,000 − $770,000) with long-term debt financing (bonds). However, earnings per share is higher because there are 200,000 fewer shares of common stock outstanding.

One disadvantage in using bonds is that the company must **pay interest** on a periodic basis. In addition, the company must also **repay the principal** at the due date. A company with fluctuating earnings and a relatively weak cash position may have great difficulty making interest payments when earnings are low.

A corporation may also obtain long-term financing from notes payable and leasing. However, notes payable and leasing are seldom sufficient to furnish the amount of funds needed for plant expansion and major projects like new buildings.

Bonds are sold in relatively small denominations (usually $1,000 multiples). As a result of their size, and the variety of their features, bonds attract many investors.

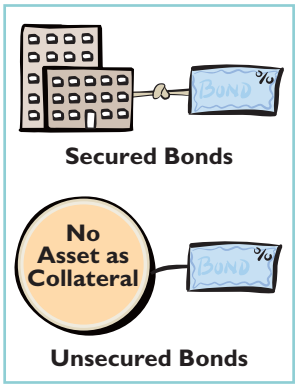
HELPFUL HINT
Besides corporations, governmental agencies and universities also issue bonds to raise capital.

Types of Bonds

Bonds may have many different features. In the following sections, we describe the types of bonds commonly issued.

SECURED AND UNSECURED BONDS

Secured bonds have specific assets of the issuer pledged as collateral for the bonds. A bond secured by real estate, for example, is called a **mortgage bond**. A bond secured by specific assets set aside to retire the bonds is called a **sinking fund bond**.



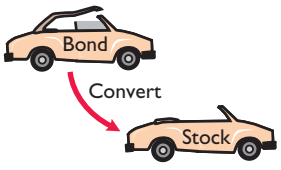
Unsecured bonds, also called **debenture bonds**, are issued against the general credit of the borrower. Companies with good credit ratings use these bonds extensively. For example, in a recent annual report, DuPont reported over $2 billion of debenture bonds outstanding.

TERM AND SERIAL BONDS

Bonds that mature—are due for payment—at a single specified future date are **term bonds**. In contrast, bonds that mature in installments are **serial bonds**.

REGISTERED AND BEARER BONDS

Bonds issued in the name of the owner are **registered bonds**. Interest payments on registered bonds are made by check to bondholders of record. Bonds not registered are **bearer** (or **coupon**) **bonds**. Holders of bearer bonds must send in coupons to receive interest payments. Most bonds issued today are registered bonds.



Convertible Bonds

Callable Bonds

CONVERTIBLE AND CALLABLE BONDS

Bonds that can be converted into common stock at the bondholder's option are **convertible bonds**. The conversion feature generally is attractive to bond buyers. Bonds that the issuing company can retire at a stated dollar amount prior to maturity are **callable bonds**. A call feature is included in nearly all corporate bond issues.

Issuing Procedures

State laws grant corporations the power to issue bonds. Both the board of directors and stockholders usually must approve bond issues. **In authorizing the bond issue, the board of directors must stipulate the number of bonds to be authorized, total face value, and contractual interest rate.** The total bond authorization often exceeds the number of bonds the company originally issues. This gives the corporation the flexibility to issue more bonds, if needed, to meet future cash requirements.

The **face value** is the amount of principal the issuing company must pay at the maturity date. The **contractual interest rate**, often referred to as the **stated rate**, is the rate used to determine the amount of cash interest the borrower pays and the investor receives. Usually the contractual rate is stated as an annual rate. Interest is generally paid semiannually.

The terms of the bond issue are set forth in a legal document called a **bond indenture**. The indenture shows the terms and summarizes the rights of the bondholders and their trustees, and the obligations of the issuing company. The **trustee** (usually a financial institution) keeps records of each bondholder, maintains custody of unissued bonds, and holds conditional title to pledged property.

ETHICS NOTE

Some companies try to minimize the amount of debt reported on their balance sheet by not reporting certain types of commitments as liabilities. This subject is of intense interest in the financial community.

In addition, the issuing company arranges for the printing of **bond certificates**. The indenture and the certificate are separate documents. As shown in Illustration 15-3, a bond certificate provides the following information: name of the issuer, face value, contractual interest rate, and maturity date. An investment company that specializes in selling securities generally sells the bonds for the issuing company.

Bond Trading

Bondholders have the opportunity to convert their holdings into cash at any time by selling the bonds at the current market price on national securities exchanges. **Bond prices are quoted as a percentage of the face value of the bond, which is usually $1,000.** A $1,000 bond with a quoted price of 97 means that the selling price of

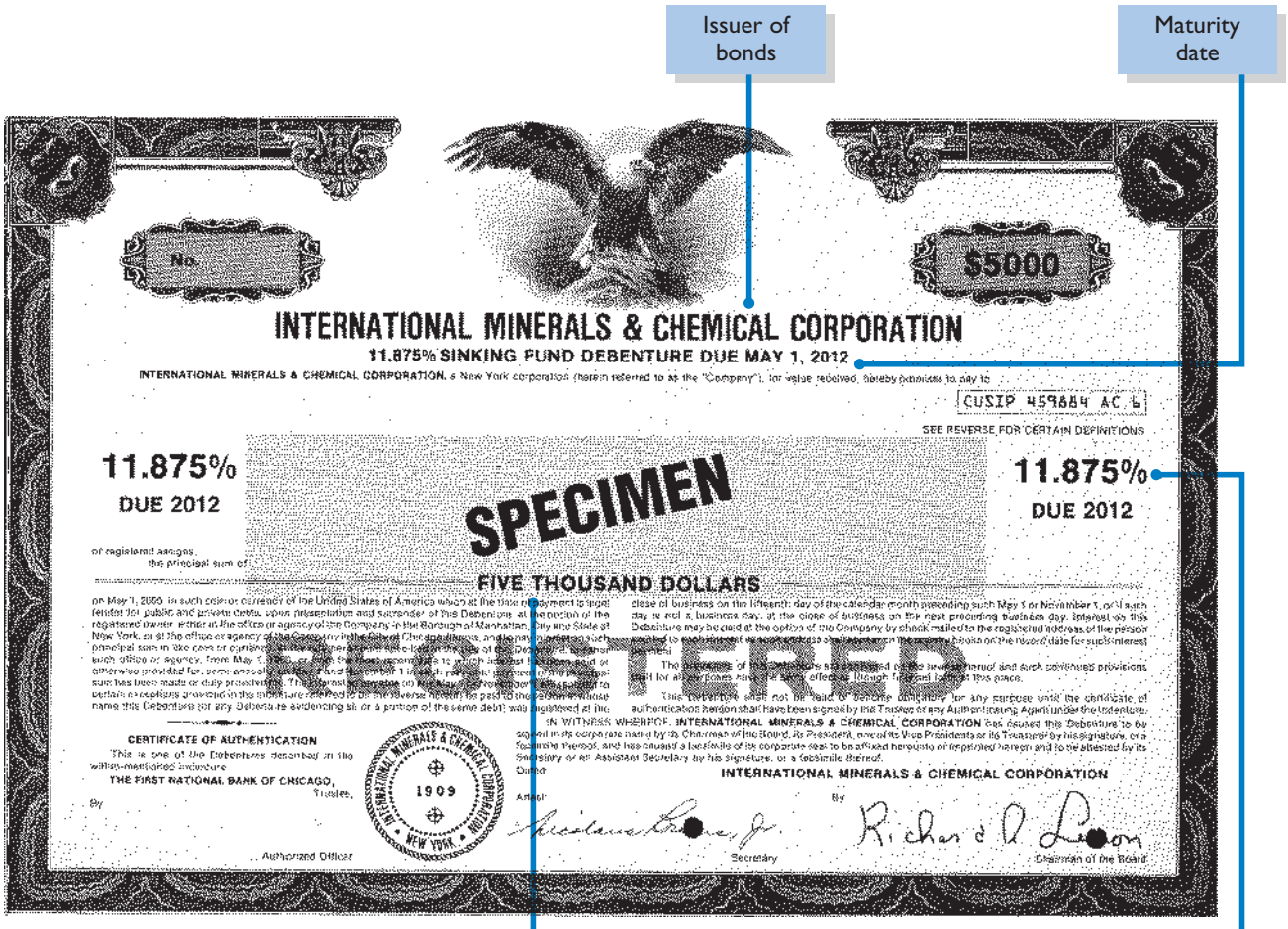


Illustration 15-3
Bond certificate

the bond is 97% of face value, or $970. Newspapers and the financial press publish bond prices and trading activity daily as illustrated by the following.

Bonds	Maturity	Close	Yield
Wal-Mart Stores 4.125	Feb. 2011	101.880	3.898

Illustration 15-4
Market information for bonds

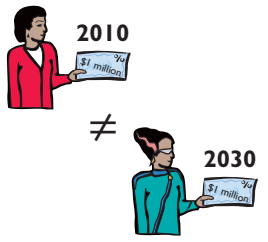
This bond listing indicates that **Wal-Mart** has outstanding 4.125%, $1,000 bonds that mature in 2011. They currently yield a 3.898% return. At the close of trading, the price was 101.880% of face value, or $1,018.80.

A corporation makes journal entries **when it issues or buys back bonds,** when it records interest, or when bondholders convert bonds into common stock. For example, **DuPont does not journalize** transactions between its bondholders and other investors. If Tom Smith sells his DuPont bonds to Faith Jones, DuPont does not journalize the transaction. (DuPont or its trustee does, however, keep records of the names of bondholders in the case of registered bonds.)

HELPFUL HINT

(1) What is the price of a $1,000 bond trading at 95¼?
(2) What is the price of a $1,000 bond trading at 101⅞?
Answers: (1) $952.50. (2) $1,018.75.

Determining the Market Value of Bonds



Same dollars at different times are not equal.

If you were an investor wanting to purchase a bond, how would you determine how much to pay? To be more specific, assume that Coronet, Inc. issues a **zero-interest bond** (pays no interest) with a face value of $1,000,000 due in 20 years. For this bond, the only cash you receive is a million dollars at the end of 20 years. Would you pay a million dollars for this bond? We hope not! A million dollars received 20 years from now is not the same as a million dollars received today.

The reason you should not pay a million dollars for Coronet's bond relates to what is called the **time value of money**. If you had a million dollars today, you would invest it. From that investment, you would earn interest such that at the end of 20 years, you would have much more than a million dollars. If someone is going to pay you a million dollars 20 years from now, you would want to find its equivalent today. In other words, you would want to determine how much you must invest today at current interest rates to have a million dollars in 20 years. The amount that must be invested today at a given rate of interest over a specified time is called **present value**.

The present value of a bond is the value at which it should sell in the marketplace. Market value therefore is a function of the three factors that determine present value: (1) the dollar amounts to be received, (2) the length of time until the amounts are received, and (3) the market rate of interest. The **market interest rate** is the rate investors demand for loaning funds. Appendix 15A discusses the process of finding the present value for bonds. Appendix C near the end of the book also provides additional material for time value of money computations.

DO IT!

BOND TERMINOLOGY

State whether each of the following statements is true or false.

_____ **1.** Mortgage bonds and sinking fund bonds are both examples of secured bonds.

_____ **2.** Unsecured bonds are also known as debenture bonds.

_____ **3.** The stated rate is the rate investors demand for loaning funds.

_____ **4.** The face value is the amount of principal the issuing company must pay at the maturity date.

_____ **5.** The bond issuer must make journal entries to record transfers of its bonds among investors.

action plan

✔ Review the types of bonds and the basic terms associated with bonds.

Solution

1. True.

2. True.

3. False. The stated rate is the contractual interest rate used to determine the amount of cash interest the borrower pays.

4. True.

5. False. The bond issuer makes journal entries only when it issues or buys back bonds, when it records interest, and when bonds are converted.

Related exercise material: **BE15-1, E15-1, E15-2,** and **DO IT! 15-1.**

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ACCOUNTING FOR BOND ISSUES

Bonds may be issued at face value, below face value (at a discount), or above face value (at a premium).

STUDY OBJECTIVE 2

Prepare the entries for the issuance of bonds and interest expense.

Issuing Bonds at Face Value

To illustrate the accounting for bonds, assume that on January 1, 2010, Candlestick Corporation issues $100,000, five-year, 10% bonds at 100 (100% of face value). The entry to record the sale is:

Jan. 1	Cash	100,000	
	Bonds Payable		100,000
	(To record sale of bonds at face value)		

A	=	L	+	SE
+100,000				
		+100,000		

Cash Flows +100,000

Candlestick reports bonds payable in the long-term liabilities section of the balance sheet because the maturity date is more than one year away.

Over the term (life) of the bonds, companies make entries to record bond interest. Interest on bonds payable is computed in the same manner as interest on notes payable, as explained in Chapter 11 (page 487). Assume that interest is payable semiannually on January 1 and July 1 on the bonds described above. In that case, Candlestick must pay interest of $5,000 ($100,000 × 10% × 6/12) on July 1, 2010. The entry for the payment, assuming no previous accrual of interest, is:

July 1	Bond Interest Expense	5,000	
	Cash		5,000
	(To record payment of bond interest)		

A	=	L	+	SE
				−5,000 Exp
−5,000				

Cash Flows −5,000

At December 31, Candlestick recognizes the $5,000 of interest expense incurred since July 1 with the following adjusting entry:

Dec. 31	Bond Interest Expense	5,000	
	Bond Interest Payable		5,000
	(To accrue bond interest)		

A	=	L	+	SE
				−5,000 Exp
		+5,000		

Cash Flows no effect

Companies classify bond interest payable as a current liability, because it is scheduled for payment within the next year. When Candlestick pays the interest on January 1, 2011, it debits (decreases) Bond Interest Payable and credits (decreases) Cash for $5,000.

Discount or Premium on Bonds

In the Candlestick illustrations above, we assumed that the contractual (stated) interest rate paid on the bonds and the market (effective) interest rate were the same. Recall that the **contractual interest rate** is the rate applied to the face (par) value to arrive at the interest paid in a year. The **market interest rate** is the rate investors demand for loaning funds to the corporation. When the contractual interest rate and the market interest rate are the same, bonds sell **at face value (par value)**.

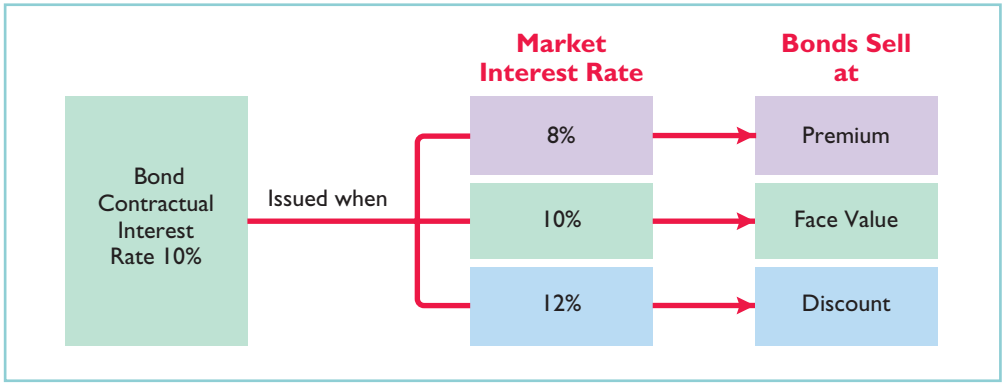
However, market interest rates change daily. The type of bond issued, the state of the economy, current industry conditions, and the company's performance all affect market interest rates. Contractual and market interest rates often differ. As a result, bonds often sell below or above face value.

To illustrate, suppose that a company issues 10% bonds at a time when other bonds of similar risk are paying 12%. Investors will not be interested in buying the 10% bonds, so their value will fall below their face value. In this case, we say the 10% bonds are **selling at a discount**. As a result of the decline in the bonds' selling price, the actual

interest rate incurred by the company increases to the level of the current market interest rate.

Conversely, if the market rate of interest is **lower than** the contractual interest rate, investors will have to pay more than face value for the bonds. That is, if the market rate of interest is 8% but the contractual interest rate on the bonds is 10%, the issuer will require more funds from the investor. In these cases, **bonds sell at a premium**. Illustration 15-5 shows these relationships graphically.

Illustration 15-5
Interest rates and bond prices



HELPFUL HINT

Discount on Bonds Payable	
Increase Debit ↓ Normal Balance	Decrease Credit

Issuing bonds at an amount different from face value is quite common. By the time a company prints the bond certificates and markets the bonds, it will be a coincidence if the market rate and the contractual rate are the same. Thus, the sale of bonds at a discount does not mean that the issuer's financial strength is suspect. Nor does the sale of bonds at a premium indicate exceptional financial strength.

Issuing Bonds at a Discount

To illustrate issuance of bonds at a discount, assume that on January 1, 2010, Candlestick, Inc. sells $100,000, five-year, 10% bonds for $92,639 (92.639% of face value). Interest is payable on July 1 and January 1. The entry to record the issuance is:

A	=	L	+	SE
+92,639				
		−7,361		
		+100,000		

Cash Flows +92,639

Jan. 1	Cash	92,639	
	Discount on Bonds Payable	7,361	
	Bonds Payable		100,000
	(To record sale of bonds at a discount)		

Although Discount on Bonds Payable has a debit balance, **it is not an asset**. Rather, it is a **contra account**. This account is **deducted from bonds payable** on the balance sheet, as shown in Illustration 15-6.

Illustration 15-6
Statement presentation of discount on bonds payable

CANDLESTICK, INC.
Balance Sheet (partial)

Long-term liabilities		
Bonds payable	$100,000	
Less: Discount on bonds payable	**7,361**	$92,639

The $92,639 represents the **carrying (or book) value** of the bonds. On the date of issue this amount equals the market price of the bonds.

The issuance of bonds below face value—at a discount—causes the total cost of borrowing to differ from the bond interest paid. That is, the issuing corporation must pay not only the contractual interest rate over the term of the bonds, but also the face value (rather than the issuance price) at maturity. Therefore, the difference between the issuance price and face value of the bonds—the discount—is an **additional cost of borrowing**. The company records this additional cost as **bond interest expense** over the life of the bonds. Appendixes 15B and 15C show the procedures for recording this additional cost.

HELPFUL HINT
Carrying value (book value) of bonds issued at a discount is determined by subtracting the balance of the discount account from the balance of the Bonds Payable account.

The total cost of borrowing $92,639 for Candlestick, Inc. is $57,361, computed as follows.

Bonds Issued at a Discount	
Semiannual interest payments ($100,000 × 10% × ½ = $5,000; $5,000 × 10)	$50,000
Add: Bond discount ($100,000 − $92,639)	7,361
Total cost of borrowing	**$57,361**

Illustration 15-7
Total cost of borrowing—bonds issued at a discount

Alternatively, we can compute the total cost of borrowing as follows.

Bonds Issued at a Discount	
Principal at maturity	$100,000
Semiannual interest payments ($5,000 × 10)	50,000
Cash to be paid to bondholders	150,000
Cash received from bondholders	92,639
Total cost of borrowing	**$ 57,361**

Illustration 15-8
Alternative computation of total cost of borrowing—bonds issued at a discount

Issuing Bonds at a Premium

To illustrate the issuance of bonds at a premium, we now assume the Candlestick, Inc. bonds described above sell for $108,111 (108.111% of face value) rather than for $92,639. The entry to record the sale is:

Jan. 1	Cash	108,111	
	Bonds Payable		100,000
	Premium on Bonds Payable		8,111
	(To record sale of bonds at a premium)		

A = L + SE
+108,111
+100,000
+8,111
Cash Flows
+108,111

Candlestick adds the premium on bonds payable **to the bonds payable amount** on the balance sheet, as shown in Illustration 15-9.

CANDLESTICK, INC. Balance Sheet (partial)		
Long-term liabilities		
Bonds payable	$100,000	
Add: Premium on bonds payable	**8,111**	$108,111

Illustration 15-9
Statement presentation of bond premium

HELPFUL HINT

Premium on Bonds Payable

Decrease Debit	Increase Credit ↓ Normal Balance

The sale of bonds above face value causes the total cost of borrowing to be **less than the bond interest paid**. The bond premium is considered to be **a reduction in the cost of borrowing**. The company credits the bond premium to Bond Interest Expense over the life of the bonds. Appendixes 15B and 15C show the procedures for recording this reduction in the cost of borrowing. The total cost of borrowing $108,111 for Candlestick, Inc. is computed as follows.

Illustration 15-10
Total cost of borrowing—bonds issued at a premium

Bonds Issued at a Premium	
Semiannual interest payments ($100,000 × 10% × ½ = $5,000; $5,000 × 10)	$50,000
Less: Bond premium ($108,111 − $100,000)	8,111
Total cost of borrowing	**$41,889**

Alternatively, we can compute the cost of borrowing as follows.

Illustration 15-11
Alternative computation of total cost of borrowing—bonds issued at a premium

Bonds Issued at a Premium	
Principal at maturity	$100,000
Semiannual interest payments ($5,000 × 10)	50,000
Cash to be paid to bondholders	150,000
Cash received from bondholders	108,111
Total cost of borrowing	**$ 41,889**

DO IT!

BOND ISSUANCE

Giant Corporation issues $200,000 of bonds for $189,000. (a) Prepare the journal entry to record the issuance of the bonds, and (b) show how the bonds would be reported on the balance sheet at the date of issuance.

action plan

- ✔ Record cash received, bonds payable at face value, and the difference as a discount or premium.
- ✔ Report discount as a deduction from bonds payable and premium as an addition to bonds payable.

Solution

(a)

Cash	189,000	
Discount on Bonds Payable	11,000	
Bonds Payable		200,000
(To record sale of bonds at a discount)		

(b)

Long-term liabilities		
Bonds payable	$200,000	
Less: Discount on bonds payable	(11,000)	
		$189,000

Related exercise material: **BE15-2, BE15-3, BE15-4, E15-6, E15-7,** and **DO IT! 15-2.**

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ACCOUNTING FOR BOND RETIREMENTS

An issuing corporation retires bonds either when it redeems the bonds or when bondholders convert them into common stock. We explain the entries for these transactions in the following sections.

STUDY OBJECTIVE 3
Describe the entries when bonds are redeemed or converted.

Redeeming Bonds at Maturity

Regardless of the issue price of bonds, the book value of the bonds at maturity will equal their face value. Assuming that the company pays and records separately the interest for the last interest period, Candlestick records the redemption of its bonds at maturity as follows:

Bonds Payable		100,000	
Cash			100,000
(To record redemption of bonds at maturity)			

A = L + SE
−100,000
−100,000
Cash Flows
−100,000

Redeeming Bonds before Maturity

Bonds also may be redeemed before maturity. A company may decide to retire bonds before maturity to reduce interest cost and to remove debt from its balance sheet. A company should retire debt early only if it has sufficient cash resources.

When a company retires bonds before maturity, it is necessary to: (1) eliminate the carrying value of the bonds at the redemption date; (2) record the cash paid; and (3) recognize the gain or loss on redemption. The carrying value of the bonds is the face value of the bonds less any remaining bond discount or plus any remaining bond premium at the redemption date.

To illustrate, assume that Candlestick, Inc. has sold its bonds at a premium. At the end of the eighth period, Candlestick retires these bonds at 103 after paying the semiannual interest. Assume also that the carrying value of the bonds at the redemption date is $101,623. Candlestick makes the following entry to record the redemption at the end of the eighth interest period (January 1, 2014):

HELPFUL HINT
Question: A bond is redeemed prior to its maturity date. Its carrying value exceeds its redemption price. Will the retirement result in a gain or a loss on redemption?
Answer: Gain.

Jan. 1	Bonds Payable	100,000	
	Premium on Bonds Payable	1,623	
	Loss on Bond Redemption	1,377	
	Cash		103,000
	(To record redemption of bonds at 103)		

A = L + SE
−100,000
−1,623
−1,377 Exp
−103,000
Cash Flows
−103,000

Note that the loss of $1,377 is the difference between the cash paid of $103,000 and the carrying value of the bonds of $101,623.

Converting Bonds into Common Stock

Convertible bonds have features that are attractive both to bondholders and to the issuer. The conversion often gives bondholders an opportunity to benefit if the market price of the common stock increases substantially. Until conversion, though, the bondholder receives interest on the bond. For the issuer of convertible bonds, the bonds sell at a higher price and pay a lower rate of interest than comparable debt securities without the conversion option. Many corporations, such as USAir, USX Corp., and DaimlerChrysler Corporation, have convertible bonds outstanding.

When the issuing company records a conversion, the company ignores the current market prices of the bonds and stock. Instead, the company transfers the **carrying value** of the bonds to paid-in capital accounts. **No gain or loss is recognized.**

To illustrate, assume that on July 1 Saunders Associates converts $100,000 bonds sold at face value into 2,000 shares of $10 par value common stock. Both the bonds and the common stock have a market value of $130,000. Saunders makes the following entry to record the conversion:

A	=	L	+	SE
		−100,000		
				+20,000 CS
				+80,000 CS

Cash Flows
no effect

July 1	Bonds Payable	100,000	
	Common Stock		20,000
	Paid-in Capital in Excess of Par Value		80,000
	(To record bond conversion)		

Note that the company does not consider the current market price of the bonds and stock ($130,000) in making the entry. This method of recording the bond conversion is often referred to as the **carrying (or book) value method**.

DO IT!

BOND REDEMPTION

action plan

- ✔ Determine and eliminate the carrying value of the bonds.
- ✔ Record the cash paid.
- ✔ Compute and record the gain or loss (the difference between the first two items).

R & B Inc. issued $500,000, 10-year bonds at a premium. Prior to maturity, when the carrying value of the bonds is $508,000, the company retires the bonds at 102. Prepare the entry to record the redemption of the bonds.

Solution

There is a loss on redemption: The cash paid, $510,000 ($500,000 × 102%), is greater than the carrying value of $508,000. The entry is:

Bonds Payable	500,000	
Premium on Bonds Payable	8,000	
Loss on Bond Redemption	2,000	
Cash		510,000
(To record redemption of bonds at 102)		

Related exercise material: **BE15-5, E15-5, E15-6, E15-8, E15-9,** and **DO IT! 15-3.**

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ACCOUNTING FOR OTHER LONG-TERM LIABILITIES

Other common types of long-term obligations are notes payable and lease liabilities. The accounting for these liabilities is explained in the following sections.

Long-Term Notes Payable

STUDY OBJECTIVE 4
Describe the accounting for long-term notes payable.

The use of notes payable in long-term debt financing is quite common. **Long-term notes payable** are similar to short-term interest-bearing notes payable except that the term of the notes exceeds one year.

A long-term note may be secured by a **mortgage** that pledges title to specific assets as security for a loan. Individuals widely use **mortgage notes payable** to purchase homes, and many small and some large companies use them to acquire plant assets. At one time, approximately 18% of McDonald's long-term debt related to mortgage notes on land, buildings, and improvements.

Mortgage loan terms may stipulate either a **fixed** or an **adjustable** interest rate. The interest rate on a fixed-rate mortgage remains the same over the life of the mortgage. The interest rate on an adjustable-rate mortgage is adjusted periodically to reflect changes in the market rate of interest. Typically, the terms require the borrower to make installment payments over the term of the loan. Each payment consists of (1) interest on the unpaid balance of the loan and (2) a reduction of loan principal. While the total amount of the payment remains constant, the interest decreases each period, while the portion applied to the loan principal increases.

Companies initially record mortgage notes payable at face value. They subsequently make entries for each installment payment. To illustrate, assume that Porter Technology Inc. issues a $500,000, 12%, 20-year mortgage note on December 31, 2010, to obtain needed financing for a new research laboratory. The terms provide for semiannual installment payments of $33,231 (not including real estate taxes and insurance). The installment payment schedule for the first two years is as follows.

Illustration 15-12 Mortgage installment payment schedule

Semiannual Interest Period	(A) Cash Payment	(B) Interest Expense (D) × 6%	(C) Reduction of Principal (A) − (B)	(D) Principal Balance (D) − (C)
12/31/10				$500,000
06/30/11	$33,231	$30,000	$3,231	496,769
12/31/11	33,231	29,806	3,425	493,344
06/30/12	33,231	29,601	3,630	489,714
12/31/12	33,231	29,383	3,848	485,866

Porter records the mortgage loan and first installment payment as follows.

Dec. 31	Cash	500,000	
	Mortgage Notes Payable		500,000
	(To record mortgage loan)		

A = L + SE
+500,000
+500,000
Cash Flows
+500,000

June 30	Interest Expense	30,000	
	Mortgage Notes Payable	3,231	
	Cash		33,231
	(To record semiannual payment on mortgage)		

A = L + SE
−30,000 Exp
−3,231
−33,231
Cash Flows
−33,231

In the balance sheet, the company reports the reduction in principal for the next year as a current liability, and it classifies the remaining unpaid principal balance as a long-term liability. At December 31, 2011, the total liability is $493,344. Of that amount, $7,478 ($3,630 + $3,848) is current, and $485,866 ($493,344 − $7,478) is long-term.

DO IT!

LONG-TERM NOTE

action plan

- ✔ Record the issuance of the note as a cash receipt and a liability.
- ✔ Each installment payment consists of interest and payment of principal.

Cole Research issues a $250,000, 8%, 20-year mortgage note to obtain needed financing for a new lab. The terms call for semiannual payments of $12,631 each. Prepare the entries to record the mortgage loan and the first installment payment.

Solution

Cash	250,000	
Mortgage Notes Payable		250,000
(To record mortgage loan)		
Interest Expense	10,000*	
Mortgage Notes Payable	2,361	
Cash		12,361
(To record semiannual payment on mortgage)		

*Interest expense = $250,000 × 8% × 6/12.

Related exercise material: **BE15-6, E15-10, E15-11,** and **DO IT! 15-4.**

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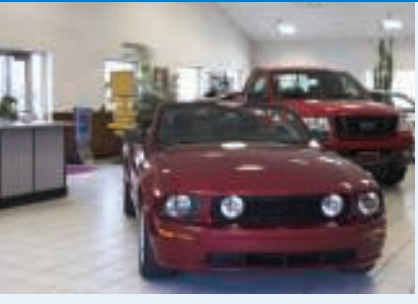
ACCOUNTING ACROSS THE ORGANIZATION



Search for Your Best Rate

Companies spend a great deal of time shopping for the best loan terms. You should do the same. Suppose that you have a used car that you are planning to trade in on the purchase of a new car. Experts suggest that you view this deal as three separate transactions: (1) the purchase of a new car, (2) the trade in or sale of an old car, and (3) shopping for an interest rate.

Studies suggest that too many people neglect transaction number 3. One survey found that 63% of people planned on shopping for the best car-loan interest rate online the next time they bought a car. But a separate study found that only 15% of people who bought a car actually shopped around for the best online rate. Too many people simply take the interest rate offered at the car dealership. Many lenders will pre-approve you for a loan up to a specific dollar amount, and many will then give you a blank check (negotiable for up to that amount) that you can take to the car dealer.

Source: Ron Lieber, "How to Haggle the Best Car Loan," *Wall Street Journal*, March 25, 2006, p. B1.

? What should you do if the dealer "trash-talks" your lender, or refuses to sell you the car for the agreed-upon price unless you get your car loan through the dealer?

Lease Liabilities

STUDY OBJECTIVE 5
Contrast the accounting for operating and capital leases.

A lease is a contractual arrangement between a lessor (owner of the property) and a lessee (renter of the property). It grants the right to use specific property for a period of time in return for cash payments. Leasing is big business. U.S. companies leased an estimated $125 billion of capital equipment in a recent year. This represents approximately one-third of equipment financed that year. The two most common types of leases are operating leases and capital leases.

OPERATING LEASES

The renting of an apartment and the rental of a car at an airport are examples of **operating leases**. **In an operating lease the intent is temporary use of the property by the lessee, while the lessor continues to own the property.**

In an operating lease, the lessee records the lease (or rental) payments as an expense. The lessor records the payments as revenue. For example, assume that a sales representative for Western Inc. leases a car from Hertz Car Rental at the Los Angeles airport and that Hertz charges a total of $275. Western, the lessee, records the rental as follows:

Car Rental Expense	275	
Cash		275
(To record payment of lease rental charge)		

A = L + SE
−275 Exp
−275
Cash Flows
−275

The lessee may incur other costs during the lease period. For example, in the case above, Western will generally incur costs for gas. Western would report these costs as an expense.

CAPITAL LEASES

In most lease contracts, the lessee makes a periodic payment and records that payment in the income statement as rent expense. In some cases, however, the lease contract transfers to the lessee substantially all the benefits and risks of ownership. Such a lease is in effect a purchase of the property. This type of lease is a **capital lease**. Its name comes from the fact that the company capitalizes the present value of the cash payments for the lease and records that amount as an asset. Illustration 15-13 indicates the major difference between operating and capital leases.

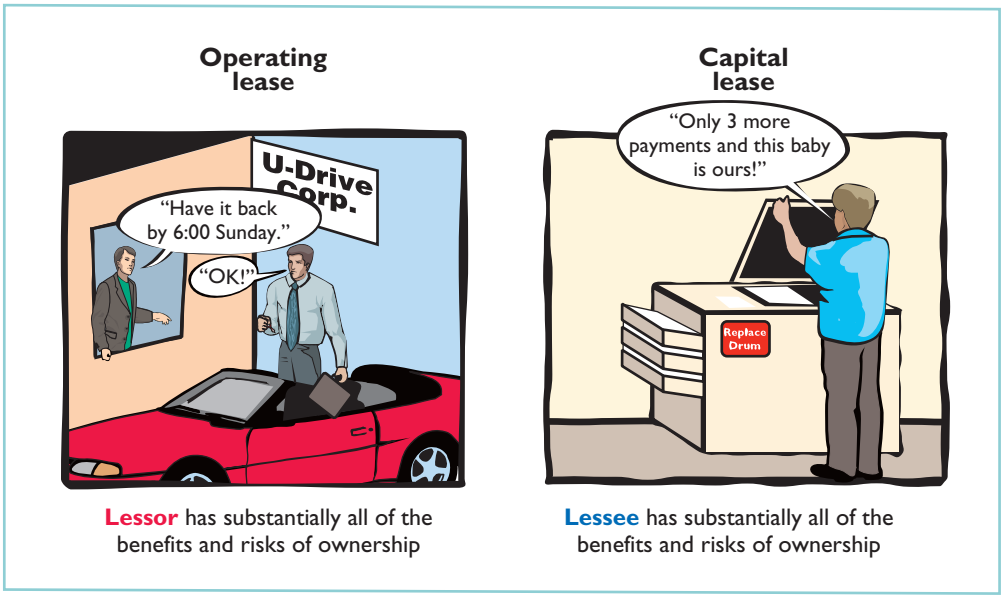


Illustration 15-13 Types of leases

HELPFUL HINT

A capital lease situation is one that, although legally a rental case, is *in substance* an installment purchase by the lessee. Accounting standards require that substance over form be used in such a situation.

If **any one** of the following conditions exists, the lessee must record a lease **as an asset**—that is, as a capital lease:

1. **The lease transfers ownership of the property to the lessee.** *Rationale:* If during the lease term the lessee receives ownership of the asset, the lessee should report the leased item as an asset on its books.
2. **The lease contains a bargain purchase option.** *Rationale:* If during the term of the lease the lessee can purchase the asset at a price substantially below its fair market value, the lessee will exercise this option. Thus, the lessee should report the leased item as an asset on its books.

3. **The lease term is equal to 75% or more of the economic life of the leased property.** *Rationale:* If the lease term is for much of the asset's useful life, the lessee should report the leased item as an asset on its books.
4. **The present value of the lease payments equals or exceeds 90% of the fair market value of the leased property.** *Rationale:* If the present value of the lease payments is equal to or almost equal to the fair market value of the asset, the lessee has essentially purchased the asset. As a result, the lessee should report the leased item as an asset on its books.

To illustrate, assume that Gonzalez Company decides to lease new equipment. The lease period is four years; the economic life of the leased equipment is estimated to be five years. The present value of the lease payments is $190,000, which is equal to the fair market value of the equipment. There is no transfer of ownership during the lease term, nor is there any bargain purchase option.

In this example, Gonzalez has essentially purchased the equipment. Conditions 3 and 4 have been met. First, the lease term is 75% or more of the economic life of the asset. Second, the present value of cash payments is equal to the equipment's fair market value. Gonzalez records the transaction as follows.

A	=	L	+	SE
+190,000				
		+190,000		

Cash Flows
no effect

Leased Asset—Equipment	190,000	
Lease Liability		190,000
(To record leased asset and lease liability)		

The lessee reports a leased asset on the balance sheet under plant assets. It reports the lease liability on the balance sheet as a liability. **The portion of the lease liability expected to be paid in the next year is a current liability. The remainder is classified as a long-term liability.**

ETHICS NOTE

Accounting standard setters are attempting to rewrite rules on lease accounting because of concerns that abuse of the current standards is reducing the usefulness of financial statements.

Most lessees do not like to report leases on their balance sheets. Why? Because the lease liability increases the company's total liabilities. This, in turn, may make it more difficult for the company to obtain needed funds from lenders. As a result, companies attempt to keep leased assets and lease liabilities off the balance sheet by structuring leases so as not to meet any of the four conditions discussed earlier. The practice of keeping liabilities off the balance sheet is referred to as **off–balance-sheet financing**.

STATEMENT PRESENTATION AND ANALYSIS

Presentation

STUDY OBJECTIVE 6

Identify the methods for the presentation and analysis of long-term liabilities.

Companies report long-term liabilities in a separate section of the balance sheet immediately following current liabilities, as shown in Illustration 15-14. Alternatively, companies may present summary data in the balance sheet, with detailed data (interest rates, maturity dates, conversion privileges, and assets pledged as collateral) shown in a supporting schedule.

Illustration 15-14
Balance sheet presentation of long-term liabilities

LAX CORPORATION
Balance Sheet (partial)

Long-term liabilities		
Bonds payable 10% due in 2017	$1,000,000	
Less: Discount on bonds payable	80,000	$ 920,000
Mortgage notes payable, 11%, due in 2023 and secured by plant assets		500,000
Lease liability		440,000
Total long-term liabilities		$1,860,000

Companies report the current maturities of long-term debt under current liabilities if they are to be paid from current assets.

Analysis

Long-term creditors and stockholders are interested in a company's long-run solvency. Of particular interest is the company's ability to pay interest as it comes due and to repay the face value of the debt at maturity. Here we look at two ratios that provide information about debt-paying ability and long-run solvency.

The **debt to total assets ratio** measures the percentage of the total assets provided by creditors. As shown in the formula in Illustration 15-15, it is computed by dividing total debt (both current and long-term liabilities) by total assets. The higher the percentage of debt to total assets, the greater the risk that the company may be unable to meet its maturing obligations.

The **times interest earned ratio** indicates the company's ability to meet interest payments as they come due. It is computed by dividing income before income taxes and interest expense by interest expense.

To illustrate these ratios, we will use data from Kellogg Company's recent annual report. The company had total liabilities of $8,871 million, total assets of $11,397 million, interest expense of $319 million, income taxes of $444 million, and net income of $1,103 million. Kellogg's debt to total assets ratio and times interest earned ratio are shown below.

Total Debt	÷	Total Assets	=	Debt to Total Assets
$8,871	÷	$11,397	=	77.8%
Income before Income Taxes and Interest Expense	÷	**Interest Expense**	=	**Times Interest Earned**
$1,103 + $444 + $319	÷	$319	=	5.85 times

Illustration 15-15
Debt to total assets and times interest earned ratios, with computations

Kellogg has a relatively high debt to total assets percentage of 78.4%. Its interest coverage of 5.75 times is considered safe.

DO IT!

FX Corporation leases new equipment on December 31, 2010. The lease transfers ownership to FX at the end of the lease. The present value of the lease payments is $240,000. After recording this lease, FX has assets of $2,000,000, liabilities of $1,200,000, and stockholders' equity of $800,000. (a) Prepare the entry to record the lease, and (b) compute and discuss the debt to total assets ratio at year-end.

LEASE LIABILITY; ANALYSIS OF LONG-TERM LIABILITIES

action plan

- ✔ Record the present value of the lease payments as an asset and a liability.
- ✔ Use the formula for the debt to total assets ratio (total debt divided by total assets).

Solution

(a)

Leased Asset—Equipment		240,000	
Lease Liability			240,000
(To record leased asset and lease liability)			

(b) The debt to total assets ratio = $1,200,000 ÷ $2,000,000 = 60%. This means that 60% of the total assets were provided by creditors. The higher the percentage of debt to total assets, the greater the risk that the company may be unable to meet its maturing obligations.

Related exercise material: **BE15-7, E15-12, E15-14,** and **DO IT! 15-5.**

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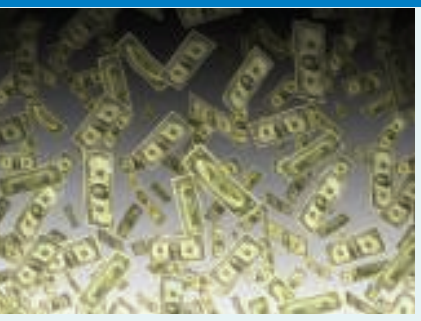
INVESTOR INSIGHT



"Covenant-Lite" Debt

In many corporate loans and bond issuances the lending agreement specifies debt covenants. These covenants typically are specific financial measures, such as minimum levels of retained earnings, cash flows, times interest earned ratios, or other measures that a company must maintain during the life of the loan. If the company violates a covenant it is considered to have violated the loan agreement; the creditors can demand immediate repayment, or they can renegotiate the loan's terms. Covenants protect lenders because they enable lenders to step in and try to get their money back before the borrower gets too deep into trouble.

During the 1990s most traditional loans specified between three to six covenants or "triggers." In more recent years, when lots of cash was available, lenders began reducing or completely eliminating covenants from loan agreements in order to be more competitive with other lenders. In a slower economy these lenders will be more likely to lose big money when companies default.

Source: Cynthia Koons, "Risky Business: Growth of 'Covenant-Lite' Debt," *Wall Street Journal*, June 18, 2007, p. C2.

? How can financial ratios such as those covered in this chapter provide protection for creditors?

Comprehensive DO IT!

Snyder Software Inc. has successfully developed a new spreadsheet program. To produce and market the program, the company needed $2 million of additional financing. On January 1, 2011, Snyder borrowed money as follows.

1. Snyder issued $500,000, 11%, 10-year convertible bonds. The bonds sold at face value and pay semiannual interest on January 1 and July 1. Each $1,000 bond is convertible into 30 shares of Snyder's $20 par value common stock.
2. Snyder issued $1 million, 10%, 10-year bonds at face value. Interest is payable semiannually on January 1 and July 1.
3. Snyder also issued a $500,000, 12%, 15-year mortgage note payable. The terms provide for semiannual installment payments of $36,324 on June 30 and December 31.

Instructions

1. For the convertible bonds, prepare journal entries for:
   - **(a)** The issuance of the bonds on January 1, 2011.
   - **(b)** Interest expense on July 1 and December 31, 2011.
   - **(c)** The payment of interest on January 1, 2012.
   - **(d)** The conversion of all bonds into common stock on January 1, 2012, when the market value of the common stock was $67 per share.
2. For the 10-year, 10% bonds:
   - **(a)** Journalize the issuance of the bonds on January 1, 2011.
   - **(b)** Prepare the journal entries for interest expense in 2011. Assume no accrual of interest on July 1.
   - **(c)** Prepare the entry for the redemption of the bonds at 101 on January 1, 2014, after paying the interest due on this date.

3. For the mortgage note payable:

(a) Prepare the entry for the issuance of the note on January 1, 2011.
(b) Prepare a payment schedule for the first four installment payments.
(c) Indicate the current and noncurrent amounts for the mortgage note payable at December 31, 2011.

action plan

- ✔ Compute interest semiannually (six months).
- ✔ Record the accrual and payment of interest on appropriate dates.
- ✔ Record the conversion of the bonds into common stock by removing the book (carrying) value of the bonds from the liability account.

Solution to Comprehensive DO IT!

1. (a) 2011

Jan. 1	Cash	500,000	
	Bonds Payable		500,000
	(To record issue of 11%, 10-year convertible bonds at face value)		

(b) 2011

July 1	Bond Interest Expense	27,500	
	Cash ($500,000 × 0.055)		27,500
	(To record payment of semiannual interest)		
Dec. 31	Bond Interest Expense	27,500	
	Bond Interest Payable		27,500
	(To record accrual of semiannual bond interest)		

(c) 2012

Jan. 1	Bond Interest Payable	27,500	
	Cash		27,500
	(To record payment of accrued interest)		

(d) Jan. 1

	Bonds Payable	500,000	
	Common Stock		300,000*
	Paid-in Capital in Excess of Par Value		200,000
	(To record conversion of bonds into common stock)		
	*($500,000 ÷ $1,000 = 500 bonds; 500 × 30 = 15,000 shares; 15,000 × $20 = $300,000)		

action plan

- ✔ Record the issuance of the bonds.
- ✔ Compute interest expense for each period.
- ✔ Compute the loss on bond redemption as the excess of the cash paid over the carrying value of the redeemed bonds.

2. (a) 2011

Jan. 1	Cash	1,000,000	
	Bonds Payable		1,000,000
	(To record issuance of bonds)		

(b) 2011

July 1	Bond Interest Expense	50,000	
	Cash		50,000
	(To record payment of semiannual interest)		
Dec. 31	Bond Interest Expense	50,000	
	Bond Interest Payable		50,000
	(To record accrual of semiannual interest)		

(c) 2014

Jan. 1	Bonds Payable		1,000,000	
	Loss on Bond Redemption		10,000*	
	Cash			1,010,000
	(To record redemption of bonds at 101)			
	*($1,010,000 − $1,000,000)			

action plan

- ✔ Compute periodic interest expense on a mortgage note, recognizing that as the principal amount decreases, so does the interest expense.
- ✔ Record mortgage payments, recognizing that each payment consists of (1) interest on the unpaid loan balance and (2) a reduction of the loan principal.

3. (a) 2011

Jan. 1	Cash		500,000	
	Mortgage Notes Payable			500,000
	(To record issuance of mortgage note payable)			

(b) Semiannual

Interest Period	Cash Payment	Interest Expense	Reduction of Principal	Principal Balance
Issue date				$500,000
1	$36,324	$30,000	$6,324	493,676
2	36,324	29,621	6,703	486,973
3	36,324	29,218	7,106	479,867
4	36,324	28,792	7,532	472,335

(c) Current liability $14,638 ($7,106 + $7,532)
Long-term liability $472,335

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SUMMARY OF STUDY OBJECTIVES

WILEY PLUS

1 **Explain why bonds are issued.** Companies may sell bonds to investors to raise long-term capital. Bonds offer the following advantages over common stock: (a) stockholder control is not affected, (b) tax savings result, (c) earnings per share of common stock may be higher.

2 **Prepare the entries for the issuance of bonds and interest expense.** When companies issue bonds, they debit Cash for the cash proceeds, and credit Bonds Payable for the face value of the bonds. The account Premium on Bonds Payable shows a bond premium; Discount on Bonds Payable shows a bond discount.

3 **Describe the entries when bonds are redeemed or converted.** When bondholders redeem bonds at maturity, the issuing company credits Cash and debits Bonds Payable for the face value of the bonds. When bonds are redeemed before maturity, the issuing company (a) eliminates the carrying value of the bonds at the redemption date, (b) records the cash paid, and (c) recognizes the gain or loss on redemption. When bonds are converted to common stock, the issuing company transfers the carrying (or book) value of the bonds to appropriate paid-in capital accounts; no gain or loss is recognized.

4 **Describe the accounting for long-term notes payable.** Each payment consists of (1) interest on the unpaid balance of the loan and (2) a reduction of loan principal. The interest decreases each period, while the portion applied to the loan principal increases.

5 **Contrast the accounting for operating and capital leases.** For an operating lease, the lessee (renter) records lease (rental) payments as an expense. For a capital lease, the lessee records the asset and related obligation at the present value of the future lease payments.

6 **Identify the methods for the presentation and analysis of long-term liabilities.** Companies should report the nature and amount of each long-term debt in the balance sheet or in the notes accompanying the financial statements. Stockholders and long-term creditors are interested in a company's long-run solvency. Debt to total assets and times interest earned are two ratios that provide information about debt-paying ability and long-run solvency.

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GLOSSARY

Bearer (coupon) bonds Bonds not registered in the name of the owner. (p. 646).

Bond certificate A legal document that indicates the name of the issuer, the face value of the bonds, the contractual interest rate and maturity date of the bonds. (p. 646).

Bond indenture A legal document that sets forth the terms of the bond issue. (p. 646).

Bonds A form of interest-bearing notes payable issued by corporations, universities, and governmental entities. (p. 644).

Callable bonds Bonds that are subject to retirement at a stated dollar amount prior to maturity at the option of the issuer. (p. 646).

Capital lease A contractual arrangement that transfers substantially all the benefits and risks of ownership to the lessee so that the lease is in effect a purchase of the property. (p. 657).

Contractual interest rate Rate used to determine the amount of cash interest the borrower pays and the investor receives. (p. 646).

Convertible bonds Bonds that permit bondholders to convert them into common stock at the bondholders' option. (p. 646).

Debenture bonds Bonds issued against the general credit of the borrower. Also called unsecured bonds. (p. 646).

Debt to total assets ratio A solvency measure that indicates the percentage of total assets provided by creditors; computed as total debt divided by total assets. (p. 659).

Discount (on a bond) The difference between the face value of a bond and its selling price, when the bond is sold for less than its face value. (p. 649).

Face value (par value) Amount of principal the issuer must pay at the maturity date of the bond. (p. 646).

Long-term liabilities Obligations expected to be paid after one year. (p. 644).

Market interest rate The rate investors demand for loaning funds to the corporation. (p. 648).

Mortgage bond A bond secured by real estate. (p. 645).

Mortgage notes payable A long-term note secured by a mortgage that pledges title to specific assets as security for a loan. (p. 655).

Operating lease A contractual arrangement giving the lessee temporary use of the property, with continued ownership of the property by the lessor. (p. 657).

Premium (on a bond) The difference between the selling price and the face value of a bond, when the bond is sold for more than its face value. (p. 650).

Registered bonds Bonds issued in the name of the owner. (p. 646).

Secured bonds Bonds that have specific assets of the issuer pledged as collateral. (p. 645).

Serial bonds Bonds that mature in installments. (p. 646).

Sinking fund bonds Bonds secured by specific assets set aside to retire them. (p. 645).

Term bonds Bonds that mature at a single specified future date. (p. 646).

Times interest earned ratio A solvency measure that indicates a company's ability to meet interest payments; computed by dividing income before income taxes and interest expense by interest expense. (p. 659).

Unsecured bonds Bonds issued against the general credit of the borrower. Also called debenture bonds. (p. 646).

APPENDIX 15A Present Value Concepts Related to Bond Pricing

Congratulations! You have a winning lottery ticket and the state has provided you with three possible options for payment. They are:

1. Receive $10,000,000 in three years.
2. Receive $7,000,000 immediately.
3. Receive $3,500,000 at the end of each year for three years.

Which of these options would you select? The answer is not easy to determine at a glance. To make a dollar-maximizing choice, you must perform present value computations. A present value computation is based on the concept of time value of money. Time value of money concepts are useful for the lottery situation and for pricing other amounts to be received in the future. This appendix discusses how to use present value concepts to price bonds. It also will tell you how to determine what option you should take as a lottery winner.

Present Value of Face Value

STUDY OBJECTIVE 7
Compute the market price of a bond.

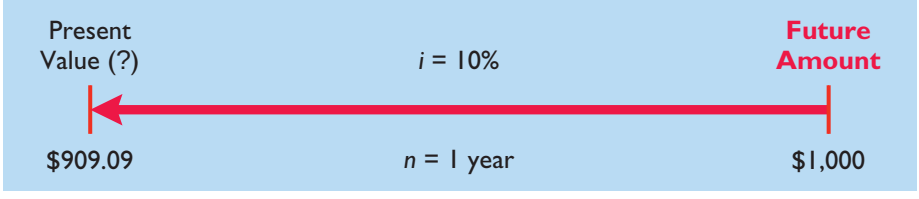
To illustrate present value concepts, assume that you are willing to invest a sum of money that will yield $1,000 at the end of one year. In other words, what amount would you need to invest today to have $1,000 one year from now? If you want to earn 10%, the investment (or present value) is $909.09 ($1,000 ÷ 1.10). Illustration 15A-1 shows the computation.

Illustration 15A-1
Present value computation—$1,000 discounted at 10% for one year

Present value	×	(1 + Interest rate)	=	Future amount
Present value	×	(1 + 10%)	=	$1,000
Present value			=	$1,000 ÷ 1.10
Present value			=	**$909.09**

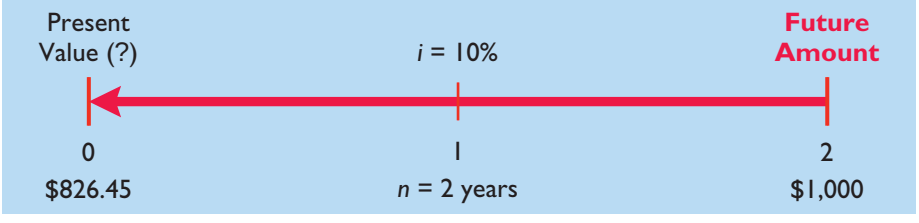
The future amount ($1,000), the interest rate (10%), and the number of periods (1) are known. We can depict the variables in this situation as shown in the time diagram in Illustration 15A-2.

Illustration 15A-2
Finding present value if discounted for one period



If you are to receive the single future amount of $1,000 **in two years**, discounted at 10%, its present value is $826.45 [($1,000 ÷ 1.10) ÷ 1.10], depicted as follows.

Illustration 15A-3
Finding present value if discounted for two periods



We also can determine the present value of 1 through tables that show the present value of 1 for *n* periods. In Table 15A-1 (page 665), *n* is the number of discounting periods involved. The percentages are the periodic interest rates, and the 5-digit decimal numbers in the respective columns are the factors for the present value of 1.

When using Table 15A-1, we multiply the future amount by the present value factor specified at the intersection of the number of periods and the interest rate. For example, the present value factor for 1 period at an interest rate of 10% is .90909, which equals the $909.09 ($1,000 × .90909) computed in Illustration 15A-1.

TABLE 15A-1
Present Value of 1

(*n*) Periods	4%	5%	6%	8%	9%	10%	11%	12%	15%
1	.96154	.95238	.94340	.92593	.91743	.90909	.90090	.89286	.86957
2	.92456	.90703	.89000	.85734	.84168	.82645	.81162	.79719	.75614
3	.88900	.86384	.83962	.79383	.77218	.75132	.73119	.71178	.65752
4	.85480	.82270	.79209	.73503	.70843	.68301	.65873	.63552	.57175
5	.82193	.78353	.74726	.68058	.64993	.62092	.59345	.56743	.49718
6	.79031	.74622	.70496	.63017	.59627	.56447	.53464	.50663	.43233
7	.75992	.71068	.66506	.58349	.54703	.51316	.48166	.45235	.37594
8	.73069	.67684	.62741	.54027	.50187	.46651	.43393	.40388	.32690
9	.70259	.64461	.59190	.50025	.46043	.42410	.39092	.36061	.28426
10	.67556	.61391	.55839	.46319	.42241	.38554	.35218	.32197	.24719

For two periods at an interest rate of 10%, the present value factor is .82645, which equals the $826.45 ($1,000 × .82645) computed previously.

Let's now go back to our lottery example. Given the present value concepts just learned, we can determine whether receiving $10,000,000 in three years is better than receiving $7,000,000 today, assuming the appropriate discount rate is 9%. The computation is as follows.

$10,000,000 × PV of 1 due in 3 years at 9% = $10,000,000 × .77218 (Table 15A-1)	$7,721,800
Amount to be received from state immediately	7,000,000
Difference	$ 721,800

Illustration 15A-4
Present value of $10,000,000 to be received in three years

What this computation shows you is that you would be $721,800 better off receiving the $10,000,000 at the end of three years rather than taking $7,000,000 immediately.

Present Value of Interest Payments (Annuities)

In addition to receiving the face value of a bond at maturity, an investor also receives periodic interest payments over the life of the bonds. These periodic payments are called **annuities**.

In order to compute the present value of an annuity, we need to know: (1) the interest rate, (2) the number of interest periods, and (3) the amount of the periodic receipts or payments. To illustrate the computation of the present value of an annuity, assume that you will receive $1,000 cash annually for three years and the interest rate is 10%. The time diagram in Illustration 15A-5 depicts this situation.

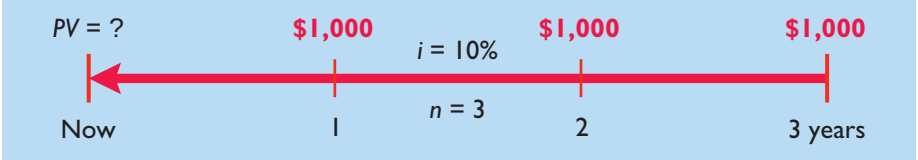


Illustration 15A-5
Time diagram for a three-year annuity

The present value in this situation may be computed as follows.

Illustration 15A-6
Present value of a series of future amounts computation

Future Amount	×	Present Value of 1 Factor at 10%	=	Present Value
$1,000 (1 year away)		.90909		$ 909.09
1,000 (2 years away)		.82645		826.45
1,000 (3 years away)		.75132		751.32
		2.48686		$2,486.86

We also can use annuity tables to value annuities. As illustrated in Table 15A-2 below, these tables show the present value of 1 to be received periodically for a given number of periods.

TABLE 15A-2
Present Value of an Annuity of 1

(*n*) Periods	4%	5%	6%	8%	9%	10%	11%	12%	15%
1	.96154	.95238	.94340	.92593	.91743	.90909	.90090	.89286	.86957
2	1.88609	1.85941	1.83339	1.78326	1.75911	1.73554	1.71252	1.69005	1.62571
3	2.77509	2.72325	2.67301	2.57710	2.53130	2.48685	2.44371	2.40183	2.28323
4	3.62990	3.54595	3.46511	3.31213	3.23972	3.16986	3.10245	3.03735	2.85498
5	4.45182	4.32948	4.21236	3.99271	3.88965	3.79079	3.69590	3.60478	3.35216
6	5.24214	5.07569	4.91732	4.62288	4.48592	4.35526	4.23054	4.11141	3.78448
7	6.00205	5.78637	5.58238	5.20637	5.03295	4.86842	4.71220	4.56376	4.16042
8	6.73274	6.46321	6.20979	5.74664	5.53482	5.33493	5.14612	4.96764	4.48732
9	7.43533	7.10782	6.80169	6.24689	5.99525	5.75902	5.53705	5.32825	4.77158
10	8.11090	7.72173	7.36009	6.71008	6.41766	6.14457	5.88923	5.65022	5.01877

From Table 15A-2 you can see that the present value factor of an annuity of 1 for three periods at 10% is 2.48685.[1] This present value factor is the total of the three individual present value factors as shown in Illustration 15A-6. Applying this amount to the annual cash flow of $1,000 produces a present value of $2,486.85.

Let's now go back to our lottery example. We determined that you would get more money if you wait and take the $10,000,000 in three years rather than take $7,000,000 immediately. But there is still another option—to receive $3,500,000 at the end of **each year** for three years (an annuity). The computation to evaluate this option (again assuming a 9% discount rate) is as follows.

Illustration 15A-7
Present value of lottery payments to be received over three years

$3,500,000 × PV of 1 due yearly for 3 years at 9% = $3,500,000 × 2.53130 (Table 15A-2)	$8,859,550
Present value of $10,000,000 to be received in 3 years	7,721,800
Difference	$1,137,750

If you take the annuity of $3,500,000 for each of 3 years, you will be $1,137,750 richer as a result.

[1] The difference of .00001 between 2.48686 and 2.48685 is due to rounding.

Time Periods and Discounting

We have used an **annual** interest rate to determine present value. Present value computations may also be done over shorter periods of time, such as monthly, quarterly, or semiannually. When the time frame is less than one year, it is necessary to convert the annual interest rate to the shorter time frame.

Assume, for example, that the investor in Illustration 15A-6 received $500 **semiannually** for three years instead of $1,000 annually. In this case, the number of periods becomes 6 (3 × 2), the interest rate is 5% (10% ÷ 2), the present value factor from Table 15A-2 is 5.07569, and the present value of the future cash flows is $2,537.85 (5.07569 × $500). This amount is slightly higher than the $2,486.86 computed in Illustration 15A-6 because interest is computed twice during the same year. That is, interest is earned on the first half year's interest.

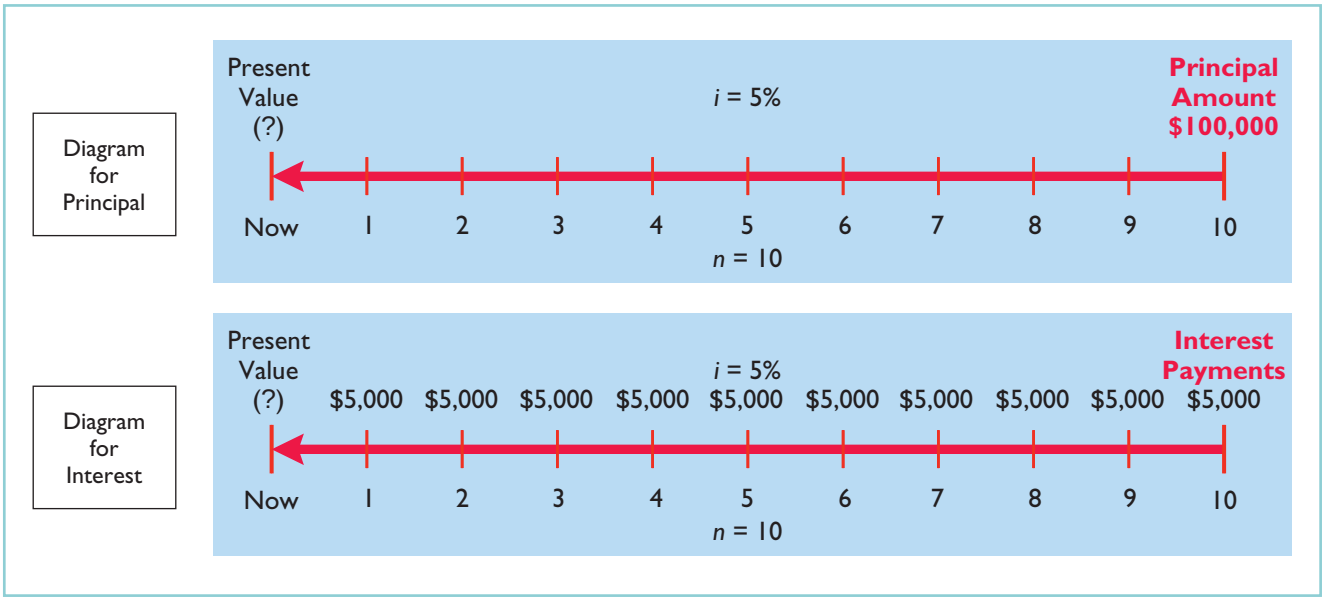
Computing the Present Value of a Bond

The present value (or market price) of a bond is a function of three variables: (1) the payment amounts, (2) the length of time until the amounts are paid, and (3) the interest (discount) rate.

The first variable (dollars to be paid) is made up of two elements: (1) a series of interest payments (an annuity), and (2) the principal amount (a single sum). To compute the present value of the bond, we must discount both the interest payments and the principal amount.

When the investor's interest (discount) rate is equal to the bond's contractual interest rate, the present value of the bonds will equal the face value of the bonds. To illustrate, assume a bond issue of 10%, five-year bonds with a face value of $100,000 with interest payable **semiannually** on January 1 and July 1. If the discount rate is the same as the contractual rate, the bonds will sell **at face value**. In this case, the investor will receive: (1) $100,000 at maturity and (2) a series of ten $5,000 interest payments [$100,000 × (10% ÷ 2)] over the term of the bonds. The length of time is expressed in terms of interest periods (in this case, 10) and the discount rate per interest period (5%). The time diagram in Illustration 15A-8 depicts the variables involved in this discounting situation.

Illustration 15A-8
Time diagram for the present value of a 10%, five-year bond paying interest semiannually



The computation of the present value of Candlestick's bonds, assuming they were issued at face value (page 649), is shown below.

Illustration 15A-9
Present value of principal and interest (face value)

10% Contractual Rate—10% Discount Rate	
Present value of principal to be received at maturity	
$100,000 × PV of 1 due in 10 periods at 5%	
$100,000 × .61391 (Table 15A-1)	$ 61,391
Present value of interest to be received periodically over the term of the bonds	
$5,000 × PV of 1 due periodically for 10 periods at 5%	
$5,000 × 7.72173 (Table 15A-2)	38,609*
Present value of bonds	**$100,000**

*(Rounded).

Now assume that the investor's required rate of return is 12%, not 10%. The future amounts are again $100,000 and $5,000, respectively. But now we must use a discount rate of 6% (12% ÷ 2). The present value of Candlestick's bonds issued at a discount (page 650) is $92,639 as computed below.

Illustration 15A-10
Present value of principal and interest (discount)

10% Contractual Rate—12% Discount Rate	
Present value of principal to be received at maturity	
$100,000 × .55839 (Table 15A-1)	$55,839
Present value of interest to be received periodically over the term of the bonds	
$5,000 × 7.36009 (Table 15A-2)	36,800
Present value of bonds	**$92,639**

If the discount rate is 8% and the contractual rate is 10%, the present value of Candlestick's bonds issued at a premium (page 651) is $108,111, computed as follows.

Illustration 15A-11
Present value of principal and interest (premium)

10% Contractual Rate—8% Discount Rate	
Present value of principal to be received at maturity	
$100,000 × .67556 (Table 15A-1)	$ 67,556
Present value of interest to be received periodically over the term of the bonds	
$5,000 × 8.11090 (Table 15A-2)	40,555
Present value of bonds	**$108,111**

SUMMARY OF STUDY OBJECTIVE FOR APPENDIX 15A

7 Compute the market price of a bond. Time value of money concepts are useful for pricing bonds. The present value (or market price) of a bond is a function of three variables: (1) the payment amounts, (2) the length of time until the amounts are paid, and (3) the interest rate.

APPENDIX 15B Effective-Interest Method of Bond Amortization

STUDY OBJECTIVE 8
Apply the effective-interest method of amortizing bond discount and bond premium.

Under the **effective-interest method**, the amortization of bond discount or bond premium results in periodic interest expense equal to a **constant percentage** of the carrying value of the bonds. The effective-interest method results in varying amounts of amortization and interest expense per period but **a constant percentage rate**.

The following steps are required under the effective-interest method.

1. Compute the **bond interest expense**. To do so, multiply the carrying value of the bonds at the beginning of the interest period by the effective-interest rate.
2. Compute the **bond interest paid** (or accrued). To do so, multiply the face value of the bonds by the contractual interest rate.
3. Compute the **amortization amount**. To do so, determine the difference between the amounts computed in steps (1) and (2).

Illustration 15B-1 depicts these steps.

(1) Bond Interest Expense			(2) Bond Interest Paid			(3)
(Carrying Value of Bonds at Beginning of Period	×	Effective Interest Rate)	− (Face Amount of Bonds	×	Contractual Interest Rate)	= Amortization Amount

Illustration 15B-1 Computation of amortization—effective-interest method

When the difference between the straight-line method of amortization (Appendix 15C) and the effective-interest method is material, GAAP requires the use of the effective-interest method.

Amortizing Bond Discount

To illustrate the effective-interest method of bond discount amortization, assume that Candlestick, Inc. issues $100,000 of 10%, five-year bonds on January 1, 2010, with interest payable each July 1 and January 1 (pages 650–651). The bonds sell for $92,639 (92.639% of face value). This sales price results in bond discount of $7,361 ($100,000 − $92,639) and an effective-interest rate of 12%. A bond discount amortization schedule, as shown in Illustration 15B-2 (page 670), facilitates the recording of interest expense and the discount amortization. Note that interest expense as a percentage of carrying value remains constant at 6%.

Candlestick Inc.xls

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CANDLESTICK, INC.
Bond Discount Amortization
Effective-Interest Method—Semiannual Interest Payments
10% Bonds Issued at 12%

Semiannual Interest Periods	(A) Interest to Be Paid (5% × $100,000)	(B) Interest Expense to Be Recorded (6% × Preceding Bond Carrying Value)	(C) Discount Amortization (B) − (A)	(D) Unamortized Discount (D) − (C)	(E) Bond Carrying Value ($100,000 − D)
Issue date				$7,361	$92,639
1	$ 5,000	$ 5,558 (6% × $92,639)	$ 558	6,803	93,197
2	5,000	5,592 (6% × $93,197)	592	6,211	93,789
3	5,000	5,627 (6% × $93,789)	627	5,584	94,416
4	5,000	5,665 (6% × $94,416)	665	4,919	95,081
5	5,000	5,705 (6% × $95,081)	705	4,214	95,786
6	5,000	5,747 (6% × $95,786)	747	3,467	96,533
7	5,000	5,792 (6% × $96,533)	792	2,675	97,325
8	5,000	5,840 (6% × $97,325)	840	1,835	98,165
9	5,000	5,890 (6% × $98,165)	890	945	99,055
10	5,000	5,945* (6% × $99,055)	945	−0−	100,000
	$50,000	$57,361	$7,361		

Column **(A)** remains constant because the face value of the bonds ($100,000) is multiplied by the semiannual contractual interest rate (5%) each period.
Column **(B)** is computed as the preceding bond carrying value times the semiannual effective-interest rate (6%).
Column **(C)** indicates the discount amortization each period.
Column **(D)** decreases each period until it reaches zero at maturity.
Column **(E)** increases each period until it equals face value at maturity.

*$2 difference due to rounding.

Illustration 15B-2
Bond discount amortization schedule

We have highlighted columns (A), (B), and (C) in the amortization schedule to emphasize their importance. These three columns provide the numbers for each period's journal entries. They are the primary reason for preparing the schedule.

For the first interest period, the computations of bond interest expense and the bond discount amortization are:

Illustration 15B-3
Computation of bond discount amortization

Bond interest expense ($92,639 × 6%)	$5,558
Contractual interest ($100,000 × 5%)	5,000
Bond discount amortization	**$ 558**

Candlestick records the payment of interest and amortization of bond discount on July 1, 2010, as follows.

A = L + SE
−5,558 Exp
+558
−5,000
Cash Flows
−5,000

July 1	Bond Interest Expense	5,558	
	Discount on Bonds Payable		558
	Cash		5,000
	(To record payment of bond interest and amortization of bond discount)		

For the second interest period, bond interest expense will be $5,592 ($93,197 × 6%), and the discount amortization will be $592. At December 31, Candlestick makes the following adjusting entry.

Dec. 31	Bond Interest Expense	5,592	
	Discount on Bonds Payable		592
	Bond Interest Payable		5,000
	(To record accrued interest and amortization of bond discount)		

A	=	L	+	SE
				−5,592 Exp
		+592		
		+5,000		

Cash Flows
no effect

Total bond interest expense for 2010 is $11,150 ($5,558 + $5,592). On January 1, Candlestick records payment of the interest by a debit to Bond Interest Payable and a credit to Cash.

Amortizing Bond Premium

The amortization of bond premium by the effective-interest method is similar to the procedures described for bond discount. For example, assume that Candlestick, Inc. issues $100,000, 10%, five-year bonds on January 1, 2010, with interest payable on July 1 and January 1 (pages 651–652). In this case, the bonds sell for $108,111. This sales price results in bond premium of $8,111 and an effective-interest rate of 8%. Illustration 15B-4 shows the bond premium amortization schedule.

HELPFUL HINT
When a bond sells for $108,111, it is quoted as 108.111% of face value. Note that $108,111 can be proven as shown in Appendix 15A.

Illustration 15B-4
Bond premium amortization schedule

Candlestick Inc.xls

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CANDLESTICK, INC.
Bond Premium Amortization
Effective-Interest Method—Semiannual Interest Payments
10% Bonds Issued at 8%

Semiannual Interest Periods	(A) Interest to Be Paid (5% × $100,000)	(B) Interest Expense to Be Recorded (4% × Preceding Bond Carrying Value)		(C) Premium Amortization (A) − (B)	(D) Unamortized Premium (D) − (C)	(E) Bond Carrying Value ($100,000 + D)
Issue date					$8,111	$108,111
1	**$ 5,000**	**$ 4,324**	**(4% × $108,111)**	**$ 676**	**7,435**	**107,435**
2	5,000	4,297	(4% × $107,435)	703	6,732	106,732
3	5,000	4,269	(4% × $106,732)	731	6,001	106,001
4	5,000	4,240	(4% × $106,001)	760	5,241	105,241
5	5,000	4,210	(4% × $105,241)	790	4,451	104,451
6	5,000	4,178	(4% × $104,451)	822	3,629	103,629
7	5,000	4,145	(4% × $103,629)	855	2,774	102,774
8	5,000	4,111	(4% × $102,774)	889	1,885	101,885
9	5,000	4,075	(4% × $101,885)	925	960	100,960
10	5,000	4,040*	(4% × $100,960)	960	−0−	100,000
	$50,000	$41,889		$8,111		

Column **(A)** remains constant because the face value of the bonds ($100,000) is multiplied by the semiannual contractual interest rate (5%) each period.
Column **(B)** is computed as the carrying value of the bonds times the semiannual effective-interest rate (4%).
Column **(C)** indicates the premium amortization each period.
Column **(D)** decreases each period until it reaches zero at maturity.
Column **(E)** decreases each period until it equals face value at maturity.

*$2 difference due to rounding.

For the first interest period, the computations of bond interest expense and the bond premium amortization are:

Illustration 15B-5
Computation of bond premium amortization

Bond interest expense ($108,111 × 4%)	$4,324
Contractual interest ($100,000 × 5%)	5,000
Bond premium amortization	**$ 676**

A = L + SE
−4,324 Exp
−676
−5,000
Cash Flows
−5,000

Candlestick records payments on the first interest date as follows.

July 1	Bond Interest Expense	4,324	
	Premium on Bonds Payable	676	
	Cash		5,000
	(To record payment of bond interest and amortization of bond premium)		

For the second interest period, interest expense will be $4,297, and the premium amortization will be $703. Total bond interest expense for 2010 is $8,621 ($4,324 + $4,297).

Comprehensive DO IT! for Appendix 15B

Gardner Corporation issues $1,750,000, 10-year, 12% bonds on January 1, 2010, at $1,968,090, to yield 10%. The bonds pay semiannual interest July 1 and January 1. Gardner uses the effective-interest method of amortization.

action plan

- ✔ Compute interest expense by multiplying bond carrying value at the beginning of the period by the effective-interest rate.
- ✔ Compute credit to cash (or bond interest payable) by multiplying the face value of the bonds by the contractual interest rate.
- ✔ Compute bond premium or discount amortization, which is the difference between interest expense and cash paid.
- ✔ Interest expense decreases when the effective-interest method is used for bonds issued at a premium. The reason is that a constant percentage is applied to a decreasing book value to compute interest expense.

Instructions

(a) Prepare the journal entry to record the issuance of the bonds.
(b) Prepare the journal entry to record the payment of interest on July 1, 2010.

Solution to Comprehensive DO IT! for Appendix 15B

(a) 2010

Jan. 1	Cash	1,968,090	
	Bonds Payable		1,750,000
	Premium on Bonds Payable		218,090
	(To record issuance of bonds at a premium)		

(b) 2010

July 1	Bond Interest Expense	98,405*	
	Premium on Bonds Payable	6,595**	
	Cash		105,000
	(To record payment of semiannual interest and amortization of bond premium)		
	*($1,968,090 × 5%)		
	**($105,000 − $98,405)		

The Navigator

SUMMARY OF STUDY OBJECTIVE FOR APPENDIX 15B

8 Apply the effective-interest method of amortizing bond discount and bond premium. The effective-interest method results in varying amounts of amortization and interest expense per period but a *constant percentage rate* of interest. When the difference between the straight-line and effective-interest method is material, GAAP requires the use of the effective-interest method.

GLOSSARY FOR APPENDIX 15B

Effective-interest method of amortization A method of amortizing bond discount or bond premium that results in periodic interest expense equal to a constant percentage of the carrying value of the bonds. (p. 669).

APPENDIX 15C Straight-Line Amortization

Amortizing Bond Discount

STUDY OBJECTIVE 9

Apply the straight-line method of amortizing bond discount and bond premium.

To follow the matching principle, companies should allocate bond discount systematically to each period in which the bonds are outstanding. The **straight-line method of amortization** allocates the **same amount to interest expense** in each interest period. The amount is determined using the formula in Illustration 15C-1.

Bond Discount	÷	Number of Interest Periods	=	Bond Discount Amortization

Illustration 15C-1 Formula for straight-line method of bond discount amortization

In the Candlestick, Inc. example (pages 650–651), the company sold $100,000, five-year, 10% bonds on January 1, 2010, for $92,639. This price resulted in a $7,361 bond discount ($100,000 − $92,639). Interest is payable on July 1 and January 1. The bond discount amortization for each interest period is $736 ($7,361 ÷ 10). Candlestick records the payment of bond interest and the amortization of bond discount on the first interest date (July 1, 2010) as follows.

July 1	Bond Interest Expense	5,736	
	Discount on Bonds Payable		736
	Cash		5,000
	(To record payment of bond interest and amortization of bond discount)		

A = L + SE
−5,736 Exp
+736
−5,000

Cash Flows
−5,000

At December 31, Candlestick makes the following adjusting entry.

Dec. 31	Bond Interest Expense	5,736	
	Discount on Bonds Payable		736
	Bond Interest Payable		5,000
	(To record accrued bond interest and amortization of bond discount)		

A = L + SE
−5,736 Exp
+736
+5,000

Cash Flows
no effect

Over the term of the bonds, the balance in Discount on Bonds Payable will decrease annually by the **same amount** until it has a zero balance at the maturity date of the bonds. Thus, the carrying value of the bonds at maturity will be equal to the face value.

It is useful to prepare a bond discount amortization schedule as shown in Illustration 15C-2 (page 674). The schedule shows interest expense, discount amortization, and the carrying value of the bond for each interest period. As indicated, the interest expense recorded **each period** for the Candlestick bond is $5,736. Also note that the carrying value of the bond increases $736 each period until it reaches its face value $100,000 at the end of period 10.

Illustration 15C-2
Bond discount amortization schedule

Candlestick Inc.xls

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CANDLESTICK, INC.
Bond Discount Amortization
Straight-Line Method—Semiannual Interest Payments

Semiannual Interest Periods	(A) Interest to Be Paid (5% × $100,000)	(B) Interest Expense to Be Recorded (A) + (C)	(C) Discount Amortization ($7,361 ÷ 10)	(D) Unamortized Discount (D) − (C)	(E) Bond Carrying Value ($100,000 − D)
Issue date				$7,361	$92,639
1	$ 5,000	$ 5,736	$ 736	6,625	93,375
2	5,000	5,736	736	5,889	94,111
3	5,000	5,736	736	5,153	94,847
4	5,000	5,736	736	4,417	95,583
5	5,000	5,736	736	3,681	96,319
6	5,000	5,736	736	2,945	97,055
7	5,000	5,736	736	2,209	97,791
8	5,000	5,736	736	1,473	98,527
9	5,000	5,736	736	737	99,263
10	5,000	5,737*	737*	−0−	100,000
	$50,000	$57,361	$7,361		

Column **(A)** remains constant because the face value of the bonds ($100,000) is multiplied by the semiannual contractual interest rate (5%) each period.
Column **(B)** is computed as the interest paid (Column A) plus the discount amortization (Column C).
Column **(C)** indicates the discount amortization each period.
Column **(D)** decreases each period by the same amount until it reaches zero at maturity.
Column **(E)** increases each period by the same amount of discount amortization until it equals the face value at maturity.

*One dollar difference due to rounding.

We have highlighted columns (A), (B), and (C) in the amortization schedule to emphasize their importance. These three columns provide the numbers for each period's journal entries. They are the primary reason for preparing the schedule.

Amortizing Bond Premium

The amortization of bond premium parallels that of bond discount. Illustration 15C-3 presents the formula for determining bond premium amortization under the straight-line method.

Illustration 15C-3
Formula for straight-line method of bond premium amortization

Bond Premium ÷ Number of Interest Periods = Bond Premium Amortization

Continuing our example, assume that Candlestick sells the bonds for $108,111, rather than $92,639 (pages 651–652). This sale price results in a bond premium of $8,111 ($108,111 − $100,000). The bond premium amortization for each interest period is $811 ($8,111 ÷ 10). Candlestick records the first payment of interest on July 1 as follows.

A = L + SE
−4,189 Exp
−811
−5,000
Cash Flows
−5,000

July 1	Bond Interest Expense	4,189	
	Premium on Bonds Payable	811	
	Cash		5,000
	(To record payment of bond interest and amortization of bond premium)		

At December 31, the company makes the following adjusting entry.

Dec. 31	Bond Interest Expense	4,189	
	Premium on Bonds Payable	811	
	Bond Interest Payable		5,000
	(To record accrued bond interest and amortization of bond premium)		

Over the term of the bonds, the balance in Premium on Bonds Payable will decrease annually **by the same amount** until it has a zero balance at maturity.

It is useful to prepare a bond premium amortization schedule as shown in Illustration 15C-4. It shows interest expense, premium amortization, and the carrying value of the bond. The interest expense recorded each period for the Candlestick bond is $4,189. Also note that the carrying value of the bond decreases $811 each period until it reaches its face value $100,000 at the end of period 10.

CANDLESTICK, INC.
Bond Premium Amortization
Straight-Line Method—Semiannual Interest Payments

Semiannual Interest Periods	(A) Interest to Be Paid (5% × $100,000)	(B) Interest Expense to Be Recorded (A) − (C)	(C) Premium Amortization ($8,111 ÷ 10)	(D) Unamortized Premium (D) − (C)	(E) Bond Carrying Value ($100,000 + D)
Issue date				$8,111	$108,111
1	$ 5,000	$ 4,189	$ 811	7,300	107,300
2	5,000	4,189	811	6,489	106,489
3	5,000	4,189	811	5,678	105,678
4	5,000	4,189	811	4,867	104,867
5	5,000	4,189	811	4,056	104,056
6	5,000	4,189	811	3,245	103,245
7	5,000	4,189	811	2,434	102,434
8	5,000	4,189	811	1,623	101,623
9	5,000	4,189	811	812	100,812
10	5,000	4,188*	812*	−0−	100,000
	$50,000	$41,889	$8,111		

Column **(A)** remains constant because the face value of the bonds ($100,000) is multiplied by the semiannual contractual interest rate (5%) each period.
Column **(B)** is computed as the interest paid (Column A) less the premium amortization (Column C).
Column **(C)** indicates the premium amortization each period.
Column **(D)** decreases each period by the same amount until it reaches zero at maturity.
Column **(E)** decreases each period by the amount of premium amortization until it equals the face value at maturity.

*One dollar difference due to rounding.

action plan

- ✔ Compute credit to cash (or bond interest payable) by multiplying the face value of the bonds by the contractual interest rate.
- ✔ Compute bond premium or discount amortization by dividing bond premium or discount by the total number of periods.
- ✔ Understand that interest expense decreases when bonds are issued at a premium. The reason is that the amortization of premium reduces the total cost of borrowing.

Solution to Comprehensive DO IT! *for Appendix 15C*

(a) 2010

Jan. 1	Cash	1,968,090	
	Bonds Payable		1,750,000
	Premium on Bonds Payable		218,090

(b) 2010

July 1	Bond Interest Expense	94,095.50**	
	Premium on Bonds Payable	10,904.50*	
	Cash		105,000

*$218,090 ÷ 20
**$105,000 − $10,904.50

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SUMMARY OF STUDY OBJECTIVE FOR APPENDIX 15C

9 Apply the straight-line method of amortizing bond discount and bond premium. The straight-line method of amortization results in a *constant amount* of amortization and interest expense per period.

GLOSSARY FOR APPENDIX 15C

Straight-line method of amortization. A method of amortizing bond discount or bond premium that results in allocating the same amount to interest expense in each interest period. (p. 673)

*__Note__: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

SELF-STUDY QUESTIONS

Answers are at the end of the chapter.

(SO 1) **1.** The term used for bonds that are unsecured is:
- **a.** callable bonds.
- **b.** indenture bonds.
- **c.** debenture bonds.
- **d.** bearer bonds.

(SO 1) **2.** The market interest rate:
- **a.** is the contractual interest rate used to determine the amount of cash interest paid by the borrower.
- **b.** is listed in the bond indenture.
- **c.** is the rate investors demand for loaning funds.
- **d.** More than one of the above is true.

(SO 2) **3.** Karson Inc. issues 10-year bonds with a maturity value of $200,000. If the bonds are issued at a premium, this indicates that:
- **a.** the contractual interest rate exceeds the market interest rate.
- **b.** the market interest rate exceeds the contractual interest rate.
- **c.** the contractual interest rate and the market interest rate are the same.
- **d.** no relationship exists between the two rates.

(SO 2) **4.** Four-Nine Corporation issued bonds that pay interest every July 1 and January 1. The entry to accrue bond interest at December 31 includes a:
- **a.** debit to Interest Payable.
- **b.** credit to Cash.
- **c.** credit to Interest Expense.
- **d.** credit to Interest Payable.

(SO 3) **5.** Gester Corporation retires its $100,000 face value bonds at 105 on January 1, following the payment of semiannual interest. The carrying value of the bonds at the redemption date is $103,745. The entry to record the redemption will include a:
- **a.** credit of $3,745 to Loss on Bond Redemption.
- **b.** debit of $3,745 to Premium on Bonds Payable.
- **c.** credit of $1,255 to Gain on Bond Redemption.
- **d.** debit of $5,000 to Premium on Bonds Payable.

(SO 3) **6.** Colson Inc. converts $600,000 of bonds sold at face value into 10,000 shares of common stock, par value $1. Both the bonds and the stock have a market value of $760,000. What amount should be credited to Paid-in Capital in Excess of Par as a result of the conversion?
a. $10,000.
b. $160,000.
c. $600,000.
d. $590,000.

(SO 4) **7.** Howard Corporation issued a 20-year mortgage note payable on January 1, 2010. At December 31, 2010, the unpaid principal balance will be reported as:
a. a current liability.
b. a long-term liability.
c. part current and part long-term liability.
d. interest payable.

(SO 4) **8.** Andrews Inc. issues a $497,000, 10% 3-year mortgage note on January 1. The note will be paid in three annual installments of $200,000, each payable at the end of the year. What is the amount of interest expense that should be recognized by Andrews Inc. in the second year?
a. $16,567.
b. $49,700.
c. $34,670.
d. $346,700.

(SO 5) **9.** Lease A does not contain a bargain purchase option, but the lease term is equal to 90 percent of the estimated economic life of the leased property. Lease B does not transfer ownership of the property to the lessee by the end of the lease term, but the lease term is equal to 75 percent of the estimated economic life of the leased property. How should the lessee classify these leases?

	Lease A	Lease B
a.	Operating lease	Capital lease
b.	Operating lease	Operating lease
c.	Capital lease	Operating lease
d.	Capital lease	Capital lease

(SO 6) **10.** For 2010, Corn Flake Corporation reported net income of $300,000. Interest expense was $40,000 and income taxes were $100,000. The times interest earned ratio was:
a. 3 times.
b. 4.4 times.
c. 7.5 times.
d. 11 times.

(SO 7) ***11.** The market price of a bond is dependent on:
a. the payment amounts.
b. the length of time until the amounts are paid.
c. the interest rate.
d. All of the above.

(SO 8) ***12.** On January 1, Besalius Inc. issued $1,000,000, 9% bonds for $939,000. The market rate of interest for these bonds is 10%. Interest is payable annually on December 31. Besalius uses the effective-interest method of amortizing bond discount. At the end of the first year, Besalius should report unamortized bond discount of:
a. $54,900. **c.** $51,610.
b. $57,100. **d.** $51,000.

(SO 8) ***13.** On January 1, Dias Corporation issued $1,000,000, 10%, 5-year bonds with interest payable on July 1 and January 1. The bonds sold for $1,081,105. The market rate of interest for these bonds was 8%. On the first interest date, using the effective-interest method, the debit entry to Bond Interest Expense is for:
a. $50,000. **c.** $43,244.
b. $54,055. **d.** $100,811.

(SO 9) ***14.** On January 1, Hurley Corporation issues $500,000, 5-year, 12% bonds at 96 with interest payable on July 1 and January 1. The entry on July 1 to record payment of bond interest and the amortization of bond discount using the straight-line method will include a:
a. debit to Interest Expense $30,000.
b. debit to Interest Expense $60,000.
c. credit to Discount on Bonds Payable $4,000.
d. credit to Discount on Bonds Payable $2,000.

(SO 9) ***15.** For the bonds issued in question 9, above, what is the carrying value of the bonds at the end of the third interest period?
a. $486,000. **c.** $472,000.
b. $488,000. **d.** $464,000.

Go to the book's companion website, **www.wiley.com/college/weygandt**, for Additional Self-Study questions.

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QUESTIONS

1. (a) What are long-term liabilities? Give three examples. (b) What is a bond?

2. (a) As a source of long-term financing, what are the major advantages of bonds over common stock? (b) What are the major disadvantages in using bonds for long-term financing?

3. Contrast the following types of bonds: (a) secured and unsecured, (b) term and serial, (c) registered and bearer, and (d) convertible and callable.

4. The following terms are important in issuing bonds: (a) face value, (b) contractual interest rate, (c) bond indenture, and (d) bond certificate. Explain each of these terms.

5. Describe the two major obligations incurred by a company when bonds are issued.

6. Assume that Koslowski Inc. sold bonds with a face value of $100,000 for $104,000. Was the market interest rate equal to, less than, or greater than the bonds' contractual interest rate? Explain.

7. If a 7%, 10-year, $800,000 bond is issued at face value and interest is paid semiannually, what is the amount of the interest payment at the end of the first semiannual period?

8. If the Bonds Payable account has a balance of $900,000 and the Discount on Bonds Payable account has a balance of $40,000, what is the carrying value of the bonds?

9. Which accounts are debited and which are credited if a bond issue originally sold at a premium is redeemed before maturity at 97 immediately following the payment of interest?
10. Henricks Corporation is considering issuing a convertible bond. What is a convertible bond? Discuss the advantages of a convertible bond from the standpoint of (a) the bondholders and (b) the issuing corporation.
11. Tim Brown, a friend of yours, has recently purchased a home for $125,000, paying $25,000 down and the remainder financed by a 10.5%, 20-year mortgage, payable at $998.38 per month. At the end of the first month, Tim receives a statement from the bank indicating that only $123.38 of principal was paid during the month. At this rate, he calculates that it will take over 67 years to pay off the mortgage. Is he right? Discuss.
12. (a) What is a lease agreement? (b) What are the two most common types of leases? (c) Distinguish between the two types of leases.
13. Clooney Company rents a warehouse on a month-to-month basis for the storage of its excess inventory. The company periodically must rent space when its production greatly exceeds actual sales. What is the nature of this type of lease agreement, and what accounting treatment should be used?
14. Rondelli Company entered into an agreement to lease 12 computers from Estes Electronics Inc. The present value of the lease payments is $186,300. Assuming that this is a capital lease, what entry would Rondelli Company make on the date of the lease agreement?
15. In general, what are the requirements for the financial statement presentation of long-term liabilities?

*16. Laura Hiatt is discussing the advantages of the effective-interest method of bond amortization with her accounting staff. What do you think Laura is saying?

*17. Markham Corporation issues $500,000 of 9%, 5-year bonds on January 1, 2010, at 104. If Markham uses the effective-interest method in amortizing the premium, will the annual interest expense increase or decrease over the life of the bonds? Explain.

*18. Tina Cruz and Dale Commons are discussing how the market price of a bond is determined. Tina believes that the market price of a bond is solely a function of the amount of the principal payment at the end of the term of a bond. Is she right? Discuss.

*19. Explain the straight-line method of amortizing discount and premium on bonds payable.

*20. DeWeese Corporation issues $400,000 of 8%, 5-year bonds on January 1, 2010, at 105. Assuming that the straight-line method is used to amortize the premium, what is the total amount of interest expense for 2010?

21. PEPSICO Did PepsiCo redeem any of its debt during the fiscal year ended December 29, 2007? (*Hint:* Examine PepsiCo's statement of cash flows.)

BRIEF EXERCISES

WILEY PLUS

Compare bond versus stock financing.
(SO 1)

BE15-1 Mareska Inc. is considering two alternatives to finance its construction of a new $2 million plant.

(a) Issuance of 200,000 shares of common stock at the market price of $10 per share.
(b) Issuance of $2 million, 8% bonds at face value.

Complete the following table, and indicate which alternative is preferable.

	Issue Stock	Issue Bond
Income before interest and taxes	$700,000	$700,000
Interest expense from bonds	_____	_____
Income before income taxes	$	$
Income tax expense (30%)	_____	_____
Net income	$	$
Outstanding shares	_____	500,000
Earnings per share	_____	_____

Prepare entries for bonds issued at face value.
(SO 2)

BE15-2 Pruitt Corporation issued 3,000, 8%, 5-year, $1,000 bonds dated January 1, 2010, at 100.

(a) Prepare the journal entry to record the sale of these bonds on January 1, 2010.
(b) Prepare the journal entry to record the first interest payment on July 1, 2010 (interest payable semiannually), assuming no previous accrual of interest.
(c) Prepare the adjusting journal entry on December 31, 2010, to record interest expense.

Prepare entries for bonds sold at a discount and a premium.
(SO 2)

BE15-3 Ratzlaff Company issues $2 million, 10-year, 8% bonds at 97, with interest payable on July 1 and January 1.

(a) Prepare the journal entry to record the sale of these bonds on January 1, 2010.
(b) Assuming instead that the above bonds sold for 104, prepare the journal entry to record the sale of these bonds on January 1, 2010.

BE15-4 Halloway Company has issued three different bonds during 2010. Interest is payable semiannually on each of these bonds. *Prepare entries for bonds issued.* (SO 2)

1. On January 1, 2010, 1,000, 8%, 5-year, $1,000 bonds dated January 1, 2010, were issued at face value.
2. On July 1, $800,000, 9%, 5-year bonds dated July 1, 2010, were issued at 102.
3. On September 1, $200,000, 7%, 5-year bonds dated September 1, 2010, were issued at 98.

Prepare the journal entry to record each bond transaction at the date of issuance.

BE15-5 The balance sheet for Lemay Company reports the following information on July 1, 2010. *Prepare entry for redemption of bonds.* (SO 3)

Long-term liabilities		
Bonds payable	$1,000,000	
Less: Discount on bonds payable	60,000	$940,000

Lemay decides to redeem these bonds at 101 after paying semiannual interest. Prepare the journal entry to record the redemption on July 1, 2010.

BE15-6 Pickeril Inc. issues a $600,000, 10%, 10-year mortgage note on December 31, 2010, to obtain financing for a new building. The terms provide for semiannual installment payments of $48,145. Prepare the entry to record the mortgage loan on December 31, 2010, and the first installment payment. *Prepare entries for long-term notes payable.* (SO 4)

BE15-7 Prepare the journal entries that the lessee should make to record the following transactions. *Contrast accounting for operating and capital lease.* (SO 5)

1. The lessee makes a lease payment of $80,000 to the lessor in an operating lease transaction.
2. Veatch Company leases a new building from Joel Construction, Inc. The present value of the lease payments is $700,000. The lease qualifies as a capital lease.

BE15-8 Presented below are long-term liability items for Molini Company at December 31, 2010. Prepare the long-term liabilities section of the balance sheet for Molini Company. *Prepare statement presentation of long-term liabilities.* (SO 6)

Bonds payable, due 2012	$500,000
Lease liability	70,000
Notes payable, due 2015	80,000
Discount on bonds payable	45,000

***BE15-9** **(a)** What is the present value of $10,000 due 8 periods from now, discounted at 10%? *Determine present value.* (SO 7)
(b) What is the present value of $20,000 to be received at the end of each of 6 periods, discounted at 8%?

***BE15-10** Presented below is the partial bond discount amortization schedule for Morales Corp. Morales uses the effective-interest method of amortization. *Use effective-interest method of bond amortization.* (SO 8)

Semiannual Interest Periods	Interest to Be Paid	Interest Expense to Be Recorded	Discount Amortization	Unamortized Discount	Bond Carrying Value
Issue date				$62,311	$937,689
1	$45,000	$46,884	$1,884	60,427	939,573
2	45,000	46,979	1,979	58,448	941,552

Instructions

(a) Prepare the journal entry to record the payment of interest and the discount amortization at the end of period 1.
(b) Explain why interest expense is greater than interest paid.
(c) Explain why interest expense will increase each period.

***BE15-11** Deane Company issues $5 million, 10-year, 9% bonds at 96, with interest payable on July 1 and January 1. The straight-line method is used to amortize bond discount. *Prepare entries for bonds issued at a discount.* (SO 9)

(a) Prepare the journal entry to record the sale of these bonds on January 1, 2010.
(b) Prepare the journal entry to record interest expense and bond discount amortization on July 1, 2010, assuming no previous accrual of interest.

***BE15-12** Coates Inc. issues $3 million, 5-year, 10% bonds at 102, with interest payable on July 1 and January 1. The straight-line method is used to amortize bond premium. *Prepare entries for bonds issued at a premium.* (SO 9)

(a) Prepare the journal entry to record the sale of these bonds on January 1, 2010.
(b) Prepare the journal entry to record interest expense and bond premium amortization on July 1, 2010, assuming no previous accrual of interest.

DO IT! REVIEW

Evaluate statements about bonds.
(SO 1)

DO IT! 15-1 State whether each of the following statements is true or false.

_____ **1.** Mortgage bonds and sinking fund bonds are both examples of debenture bonds.
_____ **2.** Convertible bonds are also known as callable bonds.
_____ **3.** The market rate is the rate investors demand for loaning funds.
_____ **4.** Semiannual interest on bonds is equal to the face value times the stated rate times 6/12.
_____ **5.** The present value of a bond is the value at which it should sell in the market.

Prepare journal entry for bond issuance and show balance sheet presentation.
(SO 2)

DO IT! 15-2 Goliath Corporation issues $300,000 of bonds for $312,000. (a) Prepare the journal entry to record the issuance of the bonds, and (b) show how the bonds would be reported on the balance sheet at the date of issuance.

Prepare entry for bond redemption.
(SO 3)

DO IT! 15-3 Hucklebuckers Corporation issued $400,000 of 10-year bonds at a discount. Prior to maturity, when the carrying value of the bonds was $390,000, the company retired the bonds at 99. Prepare the entry to record the redemption of the bonds.

Prepare entries for mortgage note and installment payment on note.
(SO 4)

DO IT! 15-4 Nitro-Sort Corporation issues a $350,000, 6%, 15-year mortgage note to obtain needed financing for a new lab. The terms call for semiannual payments of $17,857 each. Prepare the entries to record the mortgage loan and the first installment payment.

Prepare entry for lease, and compute debt to total assets ratio.
(SO 5)

DO IT! 15-5 James Morrison Corporation leases new equipment on December 31, 2010. The lease transfers ownership of the equipment to James Morrison at the end of the lease. The present value of the lease payments is $192,000. After recording this lease, James Morrison has assets of $1,800,000, liabilities of $1,100,000, and stockholders' equity of $700,000. (a) Prepare the entry to record the lease, and (b) compute and discuss the debt to total assets ratio at year-end.

EXERCISES

Evaluate statements about bonds.
(SO 1)

E15-1 Jim Thome has prepared the following list of statements about bonds.

1. Bonds are a form of interest-bearing notes payable.
2. When seeking long-term financing, an advantage of issuing bonds over issuing common stock is that stockholder control is not affected.
3. When seeking long-term financing, an advantage of issuing common stock over issuing bonds is that tax savings result.
4. Secured bonds have specific assets of the issuer pledged as collateral for the bonds.
5. Secured bonds are also known as debenture bonds.
6. Bonds that mature in installments are called term bonds.
7. A conversion feature may be added to bonds to make them more attractive to bond buyers.
8. The rate used to determine the amount of cash interest the borrower pays is called the stated rate.
9. Bond prices are usually quoted as a percentage of the face value of the bond.
10. The present value of a bond is the value at which it should sell in the marketplace.

Instructions
Identify each statement as true or false. If false, indicate how to correct the statement.

Compare two alternatives of financing—issuance of common stock vs. issuance of bonds.
(SO 1)

E15-2 Northeast Airlines is considering two alternatives for the financing of a purchase of a fleet of airplanes. These two alternatives are:

1. Issue 60,000 shares of common stock at $45 per share. (Cash dividends have not been paid nor is the payment of any contemplated).
2. Issue 10%, 10-year bonds at face value for $2,700,000.

It is estimated that the company will earn $800,000 before interest and taxes as a result of this purchase. The company has an estimated tax rate of 30% and has 90,000 shares of common stock outstanding prior to the new financing.

Instructions
Determine the effect on net income and earnings per share for these two methods of financing.

E15-3 On January 1, Neuer Company issued $500,000, 10%, 10-year bonds at face value. Interest is payable semiannually on July 1 and January 1.

Prepare entries for issuance of bonds, and payment and accrual of bond interest. (SO 2)

Instructions

Present journal entries to record the following.

(a) The issuance of the bonds.
(b) The payment of interest on July 1, assuming that interest was not accrued on June 30.
(c) The accrual of interest on December 31.

E15-4 On January 1, Flory Company issued $300,000, 8%, 5-year bonds at face value. Interest is payable semiannually on July 1 and January 1.

Prepare entries for bonds issued at face value. (SO 2)

Instructions

Prepare journal entries to record the following events.

(a) The issuance of the bonds.
(b) The payment of interest on July 1, assuming no previous accrual of interest.
(c) The accrual of interest on December 31.

E15-5 Jaurez Company issued $400,000 of 9%, 10-year bonds on January 1, 2010, at face value. Interest is payable semiannually on July 1 and January 1.

Prepare entries for bonds issued at face value. (SO 2, 3)

Instructions

Prepare the journal entries to record the following events.

(a) The issuance of the bonds.
(b) The payment of interest on July 1, assuming no previous accrual of interest.
(c) The accrual of interest on December 31.
(d) The redemption of bonds at maturity, assuming interest for the last interest period has been paid and recorded.

E15-6 Nocioni Company issued $1,000,000 of bonds on January 1, 2010.

Prepare entries for issuance, retirement, and conversion of bonds. (SO 2, 3)

Instructions

(a) Prepare the journal entry to record the issuance of the bonds if they are issued at (1) 100, (2), 98, and (3) 103.
(b) Prepare the journal entry to record the retirement of the bonds at maturity, assuming the bonds were issued at 100.
(c) Prepare the journal entry to record the retirement of the bonds before maturity at 98. Assume the balance in Premium on Bonds Payable is $9,000.
(d) Prepare the journal entry to record the conversion of the bonds into 30,000 shares of $10 par value common stock. Assume the bonds were issued at par.

E15-7 Deng Company issued $500,000 of 5-year, 8% bonds at 97 on January 1, 2010. The bonds pay interest twice a year.

Prepare entries to record issuance of bonds at discount and premium. (SO 2)

Instructions

(a) **(1)** Prepare the journal entry to record the issuance of the bonds.
(2) Compute the total cost of borrowing for these bonds.
(b) Repeat the requirements from part **(a)**, assuming the bonds were issued at 105.

E15-8 The following section is taken from Budke Corp.'s balance sheet at December 31, 2009.

Prepare entries for bond interest and redemption. (SO 2, 3)

Current liabilities	
Bond interest payable	$ 72,000
Long-term liabilities	
Bonds payable, 9%, due January 1, 2014	1,600,000

Interest is payable semiannually on January 1 and July 1. The bonds are callable on any interest date.

Instructions

(a) Journalize the payment of the bond interest on January 1, 2010.
(b) Assume that on January 1, 2010, after paying interest, Budke calls bonds having a face value of $600,000. The call price is 104. Record the redemption of the bonds.
(c) Prepare the entry to record the payment of interest on July 1, 2010, assuming no previous accrual of interest on the remaining bonds.

Prepare entries for redemption of bonds and conversion of bonds into common stock.
(SO 3)

E15-9 Presented below are three independent situations.

1. Sigel Corporation retired $130,000 face value, 12% bonds on June 30, 2010, at 102. The carrying value of the bonds at the redemption date was $117,500. The bonds pay semiannual interest, and the interest payment due on June 30, 2010, has been made and recorded.
2. Diaz Inc. retired $150,000 face value, 12.5% bonds on June 30, 2010, at 98. The carrying value of the bonds at the redemption date was $151,000. The bonds pay semiannual interest, and the interest payment due on June 30, 2010, has been made and recorded.
3. Haas Company has $80,000, 8%, 12-year convertible bonds outstanding. These bonds were sold at face value and pay semiannual interest on June 30 and December 31 of each year. The bonds are convertible into 30 shares of Haas $5 par value common stock for each $1,000 worth of bonds. On December 31, 2010, after the bond interest has been paid, $20,000 face value bonds were converted. The market value of Haas common stock was $44 per share on December 31, 2010.

Instructions
For each independent situation above, prepare the appropriate journal entry for the redemption or conversion of the bonds.

Prepare entries to record mortgage note and installment payments.
(SO 4)

E15-10 Leoni Co. receives $240,000 when it issues a $240,000, 10%, mortgage note payable to finance the construction of a building at December 31, 2010. The terms provide for semiannual installment payments of $20,000 on June 30 and December 31.

Instructions
Prepare the journal entries to record the mortgage loan and the first two installment payments.

Prepare entries to record mortgage note and installment payments.
(SO 4)

E15-11 TPo1 Company borrowed $300,000 on January 1, 2010, by issuing a $300,000, 8% mortgage note payable. The terms call for semiannual installment payments of $20,000 on June 30 and December 31.

Instructions
(a) Prepare the journal entries to record the mortgage loan and the first two installment payments.
(b) Indicate the amount of mortgage note payable to be reported as a current liability and as a long-term liability at December 31, 2010.

Prepare entries for operating lease and capital lease.
(SO 5)

E15-12 Presented below are two independent situations.

1. Speedy Car Rental leased a car to Mayfield Company for one year. Terms of the operating lease agreement call for monthly payments of $500.
2. On January 1, 2010, Olsen Inc. entered into an agreement to lease 20 computers from Gage Electronics. The terms of the lease agreement require three annual rental payments of $30,000 (including 10% interest) beginning December 31, 2010. The present value of the three rental payments is $74,606. Olsen considers this a capital lease.

Instructions
(a) Prepare the appropriate journal entry to be made by Mayfield Company for the first lease payment.
(b) Prepare the journal entry to record the lease agreement on the books of Olsen Inc. on January 1, 2010.

Prepare long-term liabilities section.
(SO 6)

E15-13 The adjusted trial balance for Gilligan Corporation at the end of the current year contained the following accounts.

Bond Interest Payable	$ 9,000
Lease Liability	89,500
Bonds Payable, due 2015	180,000
Premium on Bonds Payable	32,000

Instructions
Prepare the long-term liabilities section of the balance sheet.

E15-14 Seven Corporation reports the following amounts in their 2010 financial statements:

Compute debt to total assets and times interest earned ratios. (SO 6)

	At December 31, 2010	For the Year 2010
Total assets	$1,000,000	
Total liabilities	620,000	
Total stockholders' equity	?	
Interest expense		$ 7,000
Income tax expense		100,000
Net income		150,000

Instructions

(a) Compute the December 31, 2010, balance in stockholders' equity.
(b) Compute the debt to total assets ratio at December 31, 2010.
(c) Compute times interest earned for 2010.

***E15-15** Banzai Corporation is issuing $200,000 of 8%, 5-year bonds when potential bond investors want a return of 10%. Interest is payable semiannually.

Compute market price of bonds. (SO 7)

Instructions

Compute the market price (present value) of the bonds.

***E15-16** Hrabik Corporation issued $600,000, 9%, 10-year bonds on January 1, 2010, for $562,613. This price resulted in an effective-interest rate of 10% on the bonds. Interest is payable semiannually on July 1 and January 1. Hrabik uses the effective-interest method to amortize bond premium or discount.

Prepare entries for issuance of bonds, payment of interest, and amortization of discount using effective-interest method (SO 8)

Instructions

Prepare the journal entries to record the following. (Round to the nearest dollar.)

(a) The issuance of the bonds.
(b) The payment of interest and the discount amortization on July 1, 2010, assuming that interest was not accrued on June 30.
(c) The accrual of interest and the discount amortization on December 31, 2010.

***E15-17** Siburo Company issued $300,000, 11%, 10-year bonds on January 1, 2010, for $318,694. This price resulted in an effective-interest rate of 10% on the bonds. Interest is payable semiannually on July 1 and January 1. Siburo uses the effective-interest method to amortize bond premium or discount.

Prepare entries for issuance of bonds, payment of interest, and amortization of premium using effective-interest method. (SO 8)

Instructions

Prepare the journal entries to record the following. (Round to the nearest dollar).

(a) The issuance of the bonds.
(b) The payment of interest and the premium amortization on July 1, 2010, assuming that interest was not accrued on June 30.
(c) The accrual of interest and the premium amortization on December 31, 2010.

***E15-18** Patino Company issued $400,000, 9%, 20-year bonds on January 1, 2010, at 103. Interest is payable semiannually on July 1 and January 1. Patino uses straight-line amortization for bond premium or discount.

Prepare entries to record issuance of bonds, payment of interest, amortization of premium, and redemption at maturity. (SO 3, 9)

Instructions

Prepare the journal entries to record the following.

(a) The issuance of the bonds.
(b) The payment of interest and the premium amortization on July 1, 2010, assuming that interest was not accrued on June 30.
(c) The accrual of interest and the premium amortization on December 31, 2010.
(d) The redemption of the bonds at maturity, assuming interest for the last interest period has been paid and recorded.

***E15-19** Joseph Company issued $800,000, 11%, 10-year bonds on December 31, 2009, for $730,000. Interest is payable semiannually on June 30 and December 31. Joseph Company uses the straight-line method to amortize bond premium or discount.

Prepare entries to record issuance of bonds, payment of interest, amortization of discount, and redemption at maturity. (SO 3, 9)

Instructions
Prepare the journal entries to record the following.

(a) The issuance of the bonds.
(b) The payment of interest and the discount amortization on June 30, 2010.
(c) The payment of interest and the discount amortization on December 31, 2010.
(d) The redemption of the bonds at maturity, assuming interest for the last interest period has been paid and recorded.

EXERCISES: SET B

Visit the book's companion website at **www.wiley.com/college/weygandt**, and choose the Student Companion site, to access Exercise Set B.

PROBLEMS: SET A

Prepare entries to record issuance of bonds, interest accrual, and bond redemption.
(SO 2, 3, 6)

P15-1A On May 1, 2010, Newby Corp. issued $600,000, 9%, 5-year bonds at face value. The bonds were dated May 1, 2010, and pay interest semiannually on May 1 and November 1. Financial statements are prepared annually on December 31.

Instructions
(a) Prepare the journal entry to record the issuance of the bonds.
(b) Prepare the adjusting entry to record the accrual of interest on December 31, 2010.
(c) Show the balance sheet presentation on December 31, 2010.
(d) Int. exp. $18,000
(d) Prepare the journal entry to record payment of interest on May 1, 2011, assuming no accrual of interest from January 1, 2011, to May 1, 2011.
(e) Prepare the journal entry to record payment of interest on November 1, 2011.
(f) Loss $12,000
(f) Assume that on November 1, 2011, Newby calls the bonds at 102. Record the redemption of the bonds.

Prepare entries to record issuance of bonds, interest accrual, and bond redemption.
(SO 2, 3, 6)

P15-2A Kusmaul Electric sold $500,000, 10%, 10-year bonds on January 1, 2010. The bonds were dated January 1 and paid interest on January 1 and July 1. The bonds were sold at 104.

Instructions
(a) Prepare the journal entry to record the issuance of the bonds on January 1, 2010.
(b) At December 31, 2010, the balance in the Premium on Bonds Payable account is $18,000. Show the balance sheet presentation of accrued interest and the bond liability at December 31, 2010.
(c) Loss $9,000
(c) On January 1, 2012, when the carrying value of the bonds was $516,000, the company redeemed the bonds at 105. Record the redemption of the bonds assuming that interest for the period has already been paid.

Prepare installment payments schedule and journal entries for a mortgage note payable.
(SO 4)

P15-3A Fordyce Electronics issues a $400,000, 8%, 10-year mortgage note on December 31, 2009. The proceeds from the note are to be used in financing a new research laboratory. The terms of the note provide for semiannual installment payments, exclusive of real estate taxes and insurance, of $29,433. Payments are due June 30 and December 31.

Instructions
(a) Prepare an installment payments schedule for the first 2 years.
(b) June 30 Mortgage Notes Payable $13,433
(b) Prepare the entries for (1) the loan and (2) the first two installment payments.
(c) Current liability—2010: $29,639
(c) Show how the total mortgage liability should be reported on the balance sheet at December 31, 2010.

Analyze three different lease situations and prepare journal entries.
(SO 5)

P15-4A Presented on the next page are three different lease transactions that occurred for Kear Inc. in 2010. Assume that all lease contracts start on January 1, 2010. In no case does Kear receive title to the properties leased during or at the end of the lease term.

	Lessor		
	Jansen Delivery	**Flood Co.**	**Louis Auto**
Type of property	Computer	Delivery equipment	Automobile
Yearly rental	$ 6,000	$ 4,200	$ 3,700
Lease term	6 years	4 years	2 years
Estimated economic life	7 years	7 years	5 years
Fair market value of lease asset	$33,000	$19,000	$11,000
Present value of the lease rental payments	$31,000	$13,000	$ 6,400
Bargain purchase option	None	None	None

Instructions

(a) Which of the leases above are operating leases and which are capital leases? Explain.
(b) How should the lease transaction for Flood Co. be recorded in 2010?
(c) How should the lease transaction for Jansen Delivery be recorded on January 1, 2010?

***P15-5A** On July 1, 2010, Atwater Corporation issued $2,000,000 face value, 10%, 10-year bonds at $2,271,813. This price resulted in an effective-interest rate of 8% on the bonds. Atwater uses the effective-interest method to amortize bond premium or discount. The bonds pay semiannual interest July 1 and January 1.

Prepare entries to record issuance of bonds, payment of interest, and amortization of bond premium using effective-interest method.

(SO 2, 8)

Instructions

(Round all computations to the nearest dollar.)

(a) Prepare the journal entry to record the issuance of the bonds on July 1, 2010.
(b) Prepare an amortization table through December 31, 2011 (3 interest periods) for this bond issue.
(c) Prepare the journal entry to record the accrual of interest and the amortization of the premium on December 31, 2010.

(c) Amortization $9,127

(d) Prepare the journal entry to record the payment of interest and the amortization of the premium on July 1, 2011, assuming no accrual of interest on June 30.

(d) Amortization $9,493

(e) Prepare the journal entry to record the accrual of interest and the amortization of the premium on December 31, 2011.

(e) Amortization $9,872

***P15-6A** On July 1, 2010, Rossillon Company issued $4,000,000 face value, 8%, 10-year bonds at $3,501,514. This price resulted in an effective-interest rate of 10% on the bonds. Rossillon uses the effective-interest method to amortize bond premium or discount. The bonds pay semiannual interest July 1 and January 1.

Prepare entries to record issuance of bonds, payment of interest, and amortization of discount using effective-interest method. In addition, answer questions.

(SO 2, 8)

Instructions

(Round all computations to the nearest dollar.)

(a) Prepare the journal entries to record the following transactions.
  (1) The issuance of the bonds on July 1, 2010.
  (2) The accrual of interest and the amortization of the discount on December 31, 2010.
  (3) The payment of interest and the amortization of the discount on July 1, 2011, assuming no accrual of interest on June 30.

(a) (3) Amortization $15,830

  (4) The accrual of interest and the amortization of the discount on December 31, 2011.

(a) (4) Amortization $16,621

(b) Show the proper balance sheet presentation for the liability for bonds payable on the December 31, 2011, balance sheet.

(b) Bond carrying value $3,549,041

(c) Provide the answers to the following questions in letter form.
  (1) What amount of interest expense is reported for 2011?
  (2) Would the bond interest expense reported in 2011 be the same as, greater than, or less than the amount that would be reported if the straight-line method of amortization were used?
  (3) Determine the total cost of borrowing over the life of the bond.
  (4) Would the total bond interest expense be greater than, the same as, or less than the total interest expense that would be reported if the straight-line method of amortization were used?

***P15-7A** Soprano Electric sold $3,000,000, 10%, 10-year bonds on January 1, 2010. The bonds were dated January 1 and pay interest July 1 and January 1. Soprano Electric uses the straight-line method to amortize bond premium or discount. The bonds were sold at 104. Assume no interest is accrued on June 30.

Prepare entries to record issuance of bonds, interest accrual, and straight-line amortization for 2 years.

(SO 6, 9)

Instructions

(b) Amortization $6,000
(d) Premium on bonds payable $96,000

(a) Prepare the journal entry to record the issuance of the bonds on January 1, 2010.
(b) Prepare a bond premium amortization schedule for the first 4 interest periods.
(c) Prepare the journal entries for interest and the amortization of the premium in 2010 and 2011.
(d) Show the balance sheet presentation of the bond liability at December 31, 2011.

Prepare entries to record issuance of bonds, interest, and straight-line amortization of bond premium and discount.

(SO 6, 9)

***P15-8A** Elkins Company sold $2,500,000, 8%, 10-year bonds on July 1, 2010. The bonds were dated July 1, 2010, and pay interest July 1 and January 1. Elkins Company uses the straight-line method to amortize bond premium or discount. Assume no interest is accrued on June 30.

Instructions

(a) Amortization $5,000
(b) Amortization $2,500
(c) Premium on bonds payable $95,000
Discount on bonds payable $47,500

(a) Prepare all the necessary journal entries to record the issuance of the bonds and bond interest expense for 2010, assuming that the bonds sold at 104.
(b) Prepare journal entries as in part (a) assuming that the bonds sold at 98.
(c) Show balance sheet presentation for each bond issue at December 31, 2010.

Prepare entries to record interest payments, straight-line premium amortization, and redemption of bonds.

(SO 2, 3, 9)

***P15-9A** The following is taken from the Pinkston Company balance sheet.

PINKSTON COMPANY
Balance Sheet (partial)
December 31, 2010

Current liabilities		
Bond interest payable (for 6 months from July 1 to December 31)		$ 105,000
Long-term liabilities		
Bonds payable, 7% due January 1, 2021	$3,000,000	
Add: Premium on bonds payable	200,000	$3,200,000

Interest is payable semiannually on January 1 and July 1. The bonds are callable on any semiannual interest date. Pinkston uses straight-line amortization for any bond premium or discount. From December 31, 2010, the bonds will be outstanding for an additional 10 years (120 months).

Instructions

(b) Amortization $10,000

(a) Journalize the payment of bond interest on January 1, 2011.
(b) Prepare the entry to amortize bond premium and to pay the interest due on July 1, 2011, assuming no accrual of interest on June 30.

(c) Gain $64,000

(c) Assume that on July 1, 2011, after paying interest, Pinkston Company calls bonds having a face value of $1,200,000. The call price is 101. Record the redemption of the bonds.

(d) Amortization $6,000

(d) Prepare the adjusting entry at December 31, 2011, to amortize bond premium and to accrue interest on the remaining bonds.

PROBLEMS: SET B

Prepare entries to record issuance of bonds, interest accrual, and bond redemption.

(SO 2, 3, 6)

P15-1B On June 1, 2010, Mordica Corp. issued $2,000,000, 9%, 5-year bonds at face value. The bonds were dated June 1, 2010, and pay interest semiannually on June 1 and December 1. Financial statements are prepared annually on December 31.

Instructions

(d) Int. exp. $75,000

(a) Prepare the journal entry to record the issuance of the bonds.
(b) Prepare the adjusting entry to record the accrual of interest on December 31, 2010.
(c) Show the balance sheet presentation on December 31, 2010.
(d) Prepare the journal entry to record payment of interest on June 1, 2011, assuming no accrual of interest from January 1, 2011, to June 1, 2011.

(f) Loss $40,000

(e) Prepare the journal entry to record payment of interest on December 1, 2011.
(f) Assume that on December 1, 2011, Mordica calls the bonds at 102. Record the redemption of the bonds.

Prepare entries to record issuance of bonds, interest accrual, and bond redemption.

(SO 2, 3, 6)

P15-2B Mueller Co. sold $800,000, 9%, 10-year bonds on January 1, 2010. The bonds were dated January 1, and interest is paid on January 1 and July 1. The bonds were sold at 105.

Instructions

(a) Prepare the journal entry to record the issuance of the bonds on January 1, 2010.
(b) At December 31, 2010, the balance in the Premium on Bonds Payable account is $36,000. Show the balance sheet presentation of accrued interest and the bond liability at December 31, 2010.
(c) On January 1, 2012, when the carrying value of the bonds was $832,000, the company redeemed the bonds at 105. Record the redemption of the bonds assuming that interest for the period has already been paid.

(c) Loss $8,000

P15-3B Colt Electronics issues an $600,000, 8%, 10-year mortgage note on December 31, 2010, to help finance a plant expansion program. The terms provide for semiannual installment payments, not including real estate taxes and insurance, of $44,149. Payments are due June 30 and December 31.

Prepare installment payments schedule and journal entries for a mortgage note payable.

(SO 4)

Instructions

(a) Prepare an installment payments schedule for the first 2 years.
(b) Prepare the entries for (1) the mortgage loan and (2) the first two installment payments.
(c) Show how the total mortgage liability should be reported on the balance sheet at December 31, 2011.

(b) June 30 Mortgage Notes Payable $20,149
(c) Current liability—2011: $44,458

P15-4B Presented below are three different lease transactions in which Ortiz Enterprises engaged in 2010. Assume that all lease transactions start on January 1, 2010. In no case does Ortiz receive title to the properties leased during or at the end of the lease term.

Analyze three different lease situations and prepare journal entries.

(SO 5)

	Lessor		
	Renner Co.	**Flynn Co.**	**Miley Inc.**
Type of property	Bulldozer	Truck	Furniture
Bargain purchase option	None	None	None
Lease term	4 years	6 years	3 years
Estimated economic life	8 years	7 years	5 years
Yearly rental	$13,000	$20,000	$ 3,000
Fair market value of leased asset	$80,000	$96,000	$20,500
Present value of the lease rental payments	$48,000	$82,000	$ 9,000

Instructions

(a) Identify the leases above as operating or capital leases. Explain.
(b) How should the lease transaction for Flynn Co. be recorded on January 1, 2010?
(c) How should the lease transaction for Miley Inc. be recorded in 2010?

***P15-5B** On July 1, 2010, Wheeler Satellites issued $4,500,000 face value, 9%, 10-year bonds at $4,219,600. This price resulted in an effective-interest rate of 10% on the bonds. Wheeler uses the effective-interest method to amortize bond premium or discount. The bonds pay semiannual interest July 1 and January 1.

Prepare entries to record issuance of bonds, payment of interest, and amortization of bond discount using effective-interest method.

(SO 2, 8)

Instructions

(Round all computations to the nearest dollar.)

(a) Prepare the journal entry to record the issuance of the bonds on July 1, 2010.
(b) Prepare an amortization table through December 31, 2011 (3 interest periods) for this bond issue.
(c) Prepare the journal entry to record the accrual of interest and the amortization of the discount on December 31, 2010.
(d) Prepare the journal entry to record the payment of interest and the amortization of the discount on July 1, 2011, assuming that interest was not accrued on June 30.
(e) Prepare the journal entry to record the accrual of interest and the amortization of the discount on December 31, 2011.

(c) Amortization $8,480
(d) Amortization $8,904
(e) Amortization $9,349

***P15-6B** On July 1, 2010, Remington Chemical Company issued $4,000,000 face value, 10%, 10-year bonds at $4,543,627. This price resulted in an 8% effective-interest rate on the bonds. Remington uses the effective-interest method to amortize bond premium or discount. The bonds pay semiannual interest on each July 1 and January 1.

Prepare entries to record issuance of bonds, payment of interest, and amortization of premium using effective-interest method. In addition, answer questions.

(SO 2, 8)

Instructions

(Round all computations to the nearest dollar.)

(a) Prepare the journal entries to record the following transactions.

(1) The issuance of the bonds on July 1, 2010.

(a) (2) Amortization $18,255

(2) The accrual of interest and the amortization of the premium on December 31, 2010.

(a) (3) Amortization $18,985

(3) The payment of interest and the amortization of the premium on July 1, 2011, assuming no accrual of interest on June 30.

(a) (4) Amortization $19,745

(4) The accrual of interest and the amortization of the premium on December 31, 2011.

(b) Bond carrying value $4,486,642

(b) Show the proper balance sheet presentation for the liability for bonds payable on the December 31, 2011, balance sheet.

(c) Provide the answers to the following questions in letter form.

(1) What amount of interest expense is reported for 2011?

(2) Would the bond interest expense reported in 2011 be the same as, greater than, or less than the amount that would be reported if the straight-line method of amortization were used?

(3) Determine the total cost of borrowing over the life of the bond.

(4) Would the total bond interest expense be greater than, the same as, or less than the total interest expense if the straight-line method of amortization were used?

Prepare entries to record issuance of bonds, interest accrual, and straight-line amortization for 2 years.

(SO 6, 9)

***P15-7B** Suppan Company sold $6,000,000, 9%, 20-year bonds on January 1, 2010. The bonds were dated January 1, 2010, and pay interest on January 1 and July 1. Suppan Company uses the straight-line method to amortize bond premium or discount. The bonds were sold at 96. Assume no interest is accrued on June 30.

Instructions

(a) Prepare the journal entry to record the issuance of the bonds on January 1, 2010.

(b) Amortization $6,000

(b) Prepare a bond discount amortization schedule for the first 4 interest periods.

(d) Discount on bonds payable $216,000

(c) Prepare the journal entries for interest and the amortization of the discount in 2010 and 2011.

(d) Show the balance sheet presentation of the bond liability at December 31, 2011.

Prepare entries to record issuance of bonds, interest, and straight-line amortization of bond premium and discount.

(SO 6, 9)

***P15-8B** Jinkens Corporation sold $4,000,000, 8%, 10-year bonds on January 1, 2010. The bonds were dated January 1, 2010, and pay interest on July 1 and January 1. Jinkens Corporation uses the straight-line method to amortize bond premium or discount. Assume no interest is accrued on June 30.

Instructions

(a) Amortization $6,000
(b) Amortization $8,000
(c) Premium on bonds payable $108,000
Discount on bonds payable $144,000

(a) Prepare all the necessary journal entries to record the issuance of the bonds and bond interest expense for 2010, assuming that the bonds sold at 103.

(b) Prepare journal entries as in part (a) assuming that the bonds sold at 96.

(c) Show balance sheet presentation for each bond issue at December 31, 2010.

Prepare entries to record interest payments, straight-line discount amortization, and redemption of bonds.

(SO 2, 3, 9)

***P15-9B** The following is taken from the Nilson Corp. balance sheet.

NILSON CORPORATION
Balance Sheet (partial)
December 31, 2010

Current liabilities		
Bond interest payable (for 6 months from July 1 to December 31)		$ 108,000
Long-term liabilities		
Bonds payable, 9%, due January 1, 2021	$2,400,000	
Less: Discount on bonds payable	90,000	2,310,000

Interest is payable semiannually on January 1 and July 1. The bonds are callable on any semiannual interest date. Nilson uses straight-line amortization for any bond premium or discount. From December 31, 2010, the bonds will be outstanding for an additional 10 years (120 months).

Instructions

(Round all computations to the nearest dollar).

(a) Journalize the payment of bond interest on January 1, 2011.

(b) Amortization $4,500

(b) Prepare the entry to amortize bond discount and to pay the interest due on July 1, 2011, assuming that interest was not accrued on June 30.

(c) Assume that on July 1, 2011, after paying interest, Nilson Corp. calls bonds having a face value of $800,000. The call price is 102. Record the redemption of the bonds. (c) Loss $44,500

(d) Prepare the adjusting entry at December 31, 2011, to amortize bond discount and to accrue interest on the remaining bonds. (d) Amortization $3,000

PROBLEMS: SET C

Visit the book's companion website at **www.wiley.com/college/weygandt**, and choose the Student Companion site, to access Problem Set C.

COMPREHENSIVE PROBLEM: CHAPTERS 13–15

Nordham Corporation's trial balance at December 31, 2010, is presented below. All 2010 transactions have been recorded except for the items described below and on the next page.

	Debit	Credit
Cash	$ 23,000	
Accounts Receivable	51,000	
Merchandise Inventory	22,700	
Land	65,000	
Building	95,000	
Equipment	40,000	
Allowance for Doubtful Accounts		$ 450
Accumulated Depreciation—Building		30,000
Accumulated Depreciation—Equipment		14,400
Accounts Payable		19,300
Bond Interest Payable		–0–
Dividends Payable		–0–
Unearned Rent Revenue		8,000
Bonds Payable (10%)		50,000
Common Stock ($10 par)		30,000
Paid-in Capital in Excess of Par—Common Stock		6,000
Preferred Stock ($20 par)		–0–
Paid-in Capital in Excess of Par—Preferred Stock		–0–
Retained Earnings		75,050
Treasury Stock	–0–	
Dividends	–0–	
Sales		570,000
Rent Revenue		–0–
Bad Debts Expense	–0–	
Bond Interest Expense	2,500	
Cost of Goods Sold	400,000	
Depreciation Expense—Buildings	–0–	
Depreciation Expense—Equipment	–0–	
Other Operating Expenses	39,000	
Salaries Expense	65,000	
Total	$803,200	$803,200

Unrecorded transactions

1. On January 1, 2010, Nordham issued 1,000 shares of $20 par, 6% preferred stock for $22,000.
2. On January 1, 2010, Nordham also issued 1,000 shares of common stock for $23,000.
3. Nordham reacquired 300 shares of its common stock on July 1, 2010, for $49 per share.
4. On December 31, 2010, Nordham declared the annual preferred stock dividend and a $1.50 per share dividend on the outstanding common stock, all payable on January 15, 2011.
5. Nordham estimates that uncollectible accounts receivable at year-end is $5,100.
6. The building is being depreciated using the straight-line method over 30 years. The salvage value is $5,000.
7. The equipment is being depreciated using the straight-line method over 10 years. The salvage value is $4,000.

8. The unearned rent was collected on October 1, 2010. It was receipt of 4 months' rent in advance (October 1, 2010 through January 31, 2011).
9. The 10% bonds payable pay interest every January 1 and July 1. The interest for the 6 months ended December 31, 2010, has not been paid or recorded.

Instructions
(Ignore income taxes.)

(a) Prepare journal entries for the transactions listed above.
(b) Total $868,700 **(b)** Prepare an updated December 31, 2010, trial balance, reflecting the unrecorded transactions.
(c) Prepare a multiple-step income statement for the year ending December 31, 2010.
(d) Prepare a statement of retained earnings for the year ending December 31, 2010.
(e) Total assets $270,900 **(e)** Prepare a classified balance sheet as of December 31, 2010.

CONTINUING COOKIE CHRONICLE

(*Note:* This is a continuation of the Cookie Chronicle from Chapters 1 through 14.)

CCC15 Natalie and Curtis have been experiencing great demand for their cookies and muffins. As a result, they are now thinking about buying a commercial oven. They know which oven they want and how much it will cost. They have some cash set aside for the purchase and will need to borrow the rest. They met with a bank manager to discuss their options.

Go to the book's companion website, **www.wiley.com/college/weygandt**, *to see the completion of this problem.*

BROADENING YOUR PERSPECTIVE

FINANCIAL REPORTING AND ANALYSIS

Financial Reporting Problem: PepsiCo, Inc.

BYP15-1 Refer to the financial statements of PepsiCo, Inc. and the Notes to Consolidated Financial Statements in Appendix A.

Instructions

(a) What was PepsiCo's total long-term debt at December 29, 2007? What was the increase/decrease in total long-term debt from the prior year? What does Note 9 to the financial statements indicate about the composition of PepsiCo's long-term debt obligation?
(b) What type of leases, operating or capital, does PepsiCo report? (See Note 9.) Are these leases reported on PepsiCo's financial statements?
(c) What are the total long-term contractual commitments that PepsiCo reports as of December 29, 2007? (See Note 9.)

Comparative Analysis Problem: PepsiCo, Inc. vs. The Coca-Cola Company

BYP15-2 PepsiCo's financial statements are presented in Appendix A. Financial statements of The Coca-Cola Company are presented in Appendix B.

Instructions

(a) Based on the information contained in these financial statements, compute the following 2007 ratios for each company.
  (1) Debt to total assets.
  (2) Times interest earned.

(b) What conclusions concerning the companies' long-run solvency can be drawn from these ratios?

(c) Which company has reported the greater amount of future long-term commitments for the 5 succeeding years?

Exploring the Web

BYP15-3 Bond or debt securities pay a stated rate of interest. This rate of interest is dependent on the risk associated with the investment. Moody's Investment Service provides ratings for companies that issue debt securities.

Address: www.moodys.com, or go to **www.wiley.com/college/weygandt**

Steps: From Moody's homepage, choose **About Moody's**.

Instructions

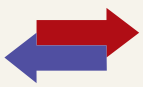
(a) What year did Moody's introduce the first bond rating? (See **Moody's History**.)

(b) What is the total amount of debt securities that Moody's analysts "track"? (See **An Introduction**.)

(c) What characteristics must debt ratings have in order to be useful to the capital markets? (See **Understand Risk: The Truth About Credit Ratings**.)

CRITICAL THINKING

Decision Making Across the Organization



***BYP15-4** On January 1, 2008, Carlin Corporation issued $2,400,000 of 5-year, 8% bonds at 95; the bonds pay interest semiannually on July 1 and January 1. By January 1, 2010, the market rate of interest for bonds of risk similar to those of Carlin Corporation had risen. As a result the market value of these bonds was $2,000,000 on January 1, 2010—below their carrying value. Andrea Carlin, president of the company, suggests repurchasing all of these bonds in the open market at the $2,000,000 price. To do so the company will have to issue $2,000,000 (face value) of new 10-year, 11% bonds at par. The president asks you, as controller, "What is the feasibility of my proposed repurchase plan?"

Instructions

With the class divided into groups, answer the following.

(a) What is the carrying value of the outstanding Carlin Corporation 5-year bonds on January 1, 2010? (Assume straight-line amortization.)

(b) Prepare the journal entry to retire the 5-year bonds on January 1, 2010. Prepare the journal entry to issue the new 10-year bonds.

(c) Prepare a short memo to the president in response to her request for advice. List the economic factors that you believe should be considered for her repurchase proposal.

Communication Activity

BYP15-5 Joe Penner, president of Penner Corporation, is considering the issuance of bonds to finance an expansion of his business. He has asked you to (1) discuss the advantages of bonds over common stock financing, (2) indicate the types of bonds he might issue, and (3) explain the issuing procedures used in bond transactions.

Instructions

Write a memo to the president, answering his request.

Ethics Case

BYP15-6 Sam Farr is the president, founder, and majority owner of Galena Medical Corporation, an emerging medical technology products company. Galena is in dire need of additional capital to keep operating and to bring several promising products to final development, testing, and production. Sam, as owner of 51% of the outstanding stock, manages the company's operations. He places heavy emphasis on research and development and on long-term growth. The other principal stockholder is Jill Hutton who, as a nonemployee investor, owns 40% of the stock. Jill would like to deemphasize the R&D functions and emphasize the marketing function, to maximize short-run sales and profits from existing products. She believes this strategy would raise the market price of Galena's stock.

All of Sam's personal capital and borrowing power is tied up in his 51% stock ownership. He knows that any offering of additional shares of stock will dilute his controlling interest because he won't be able to participate in such an issuance. But, Jill has money and would likely buy enough shares to gain control of Galena. She then would dictate the company's future direction, even if it meant replacing Sam as president and CEO.

The company already has considerable debt. Raising additional debt will be costly, will adversely affect Galena's credit rating, and will increase the company's reported losses due to the growth in interest expense. Jill and the other minority stockholders express opposition to the assumption of additional debt, fearing the company will be pushed to the brink of bankruptcy. Wanting to maintain his control and to preserve the direction of "his" company, Sam is doing everything to avoid a stock issuance. He is contemplating a large issuance of bonds, even if it means the bonds are issued with a high effective-interest rate.

Instructions

(a) Who are the stakeholders in this situation?
(b) What are the ethical issues in this case?
(c) What would you do if you were Sam?

"All About You" Activity

BYP15-7 Numerous articles have been written that identify early warning signs that you might be getting into trouble with your personal debt load. You can find many good articles on this topic on the Web.

Instructions

Find an article that identifies early warning signs of personal debt trouble. Write up a summary of the article and bring your summary and the article to class to share.

Answers to Insight and Accounting Across the Organization Questions

p. 656 Search for Your Best Rate

Q: What should you do if the dealer "trash-talks" your lender, or refuses to sell you the car for the agreed-upon price unless you get your car loan through the dealer?

A: *Experts suggest that if the dealer "trash-talks" your lender or refuses to sell you the car at the agreed-upon price unless you get your financing through the dealer, get up and leave, and buy your car somewhere else.*

p. 660 "Covenant-Lite" Debt

Q: How can financial ratios such as those covered in this chapter provide protection for creditors?

A: *Financial ratios such as the current ratio, debt to total assets ratio, and the times interest earned ratio provide indications of a company's liquidity and solvency. By specifying minimum levels of liquidity and solvency, as measured by these ratios, a creditor creates triggers that enable it to step in before a company's financial situation becomes too dire.*

Answers to Self-Study Questions

1. c **2.** c **3.** a **4.** d **5.** b **6.** d **7.** c **8.** c **9.** d **10.** d ***11.** d ***12.** b ***13.** c ***14.** d ***15.** a

Remember to go back to the Navigator box on the chapter-opening page and check off your completed work.