

Introduction to Accounting 2

Modul 5

CHAPTER 16

LONG-TERM LIABILITIES

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 a bond sinking fund
5. Describe the accounting for long-term notes payable
6. Contrast the accounting for operating and capital leases
7. Identify the methods for the presentation and analysis of long-term liabilities

LONG-TERM LIABILITIES

- Long-term liabilities are obligations that are expected to be paid after one year.
- Long-term liabilities include bonds, long-term notes, and lease obligations.

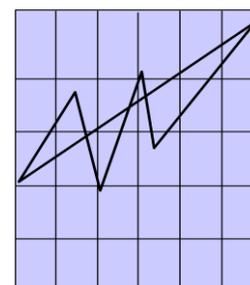
BOND BASICS

- A **bond** is simply a form of an interest-bearing note. Like a note, a bond requires periodic interest payments, and the face amount must be repaid at the maturity date.
- Bonds are a form of interest-bearing notes payable issued by corporations, governments, and governmental agencies.
- Bonds, like common shares, can be sold in small denominations (usually a thousand dollars), and as a result they attract investors

WHY ISSUE BONDS?

From the standpoint of the corporation seeking long-term financing, bonds offer the following advantages over common shares:

1. Shareholder control is not affected.
2. Income tax savings result.
3. Earnings per share may be higher.



DISADVANTAGES

- The major disadvantages resulting from the use of bonds are that
 - Interest must be paid on a periodic basis, and
 - Principal (face value) of the bonds must be paid at maturity.

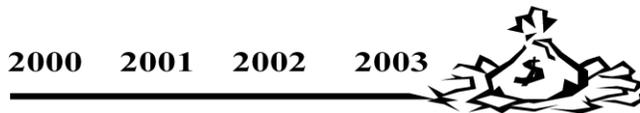
TYPES OF BONDS SECURED AND UNSECURED

- Secured bonds have specific assets of the issuer pledged as collateral for the bonds. A bond can be secured by real estate or other assets.
- Unsecured bonds are issued against the general credit of the borrower; they are also called debenture bonds.

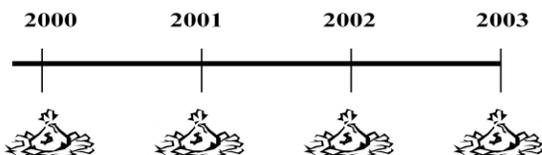


TYPES OF BONDS TERM AND SERIAL BONDS

Bonds that mature at a single specified future date are called term bonds.



In contrast, bonds that mature in installments are called serial bonds.



TYPES OF BONDS REGISTERED AND BEARER

- Registered bonds are issued in the name of the owner and have interest payments made by cheque to bondholders of record.
- Bearer or coupon bonds are not registered; thus bondholders must send in coupons to receive interest payments.

TYPES OF BONDS CONVERTIBLE, REDEEMABLE, AND RETRACTABLE

- Convertible bonds permit bondholders to convert the bonds into common shares at their option.
- Redeemable (callable) bonds are subject to call and retirement at a stated dollar amount prior to maturity at the option of the issuer.
- Retractable bonds are subject to redemption prior to maturity at the option of the holder.

ISSUING PROCEDURES

- The face value is the amount of principal due 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.
- Bond certificates, which provide information such as name of issuer, face value, contractual interest rate and maturity date, are authorized by the Board and printed.

DETERMINING THE MARKET VALUE OF BONDS

The market value (present value) of a bond is a function of three factors:

- The dollar amounts to be received,
- The length of time (n) until the amounts are received, and
- The market rate of interest (i) which is the rate investors demand for loaning funds to the corporation.

The **market** or **effective rate of interest** is determined by transactions between buyers and sellers of similar bonds. The market rate of interest is affected by a variety of factors, including:

1. investors assessment of current economic conditions, and
2. future expectations.

The time value of money concept recognizes that an amount of cash to be received today is worth more than the same amount of cash to be received in the future.

- The process of finding the present value is referred to as discounting the future amounts.

- The time value of money concept recognizes that an amount of cash to be received today is worth more than the same amount of cash to be received in the future.

TIME DIAGRAM DEPICTING CASH FLOWS

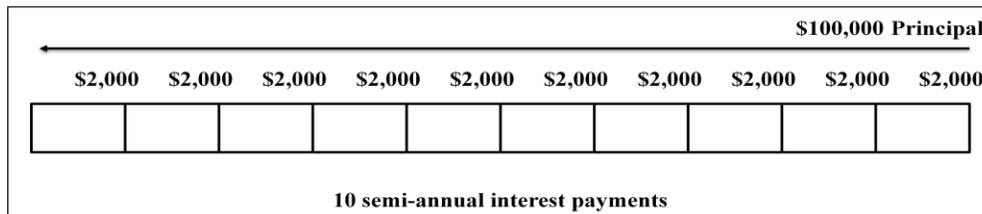


ILLUSTRATION 16-6 CALCULATING THE PRESENT VALUE OF BONDS

The market value of a bond is equal to the present value of all the future cash payments promised by the bond.

Present value of \$100,000 received in 10 periods		
	\$100,000 x 0.82035 (Table B-1: $n=10, i=2\%$)	\$ 82,035
Present value of \$2,000 received annually for 10 periods		
	\$2,000 x 8.98259 (Table B-2: $n=10, i=2\%$)	<u>17,965</u>
Present (market) value of bonds		\$100,000

ACCOUNTING FOR BOND ISSUES

Bonds may be issued at:

- Face value
- Below face value (discount) or
- Above face value (premium).

ISSUING BONDS AT FACE VALUE

Bonds payable are reported in the long-term liability section of the balance sheet because the maturity date (January 1, 2008 in this case) is more than one year away.

Date	Account Titles and Explanation	Debit	Credit
Jan.1	Cash		
	Bonds Payable	1,000,000	
	To record sale of bonds at face value.		1,000,000

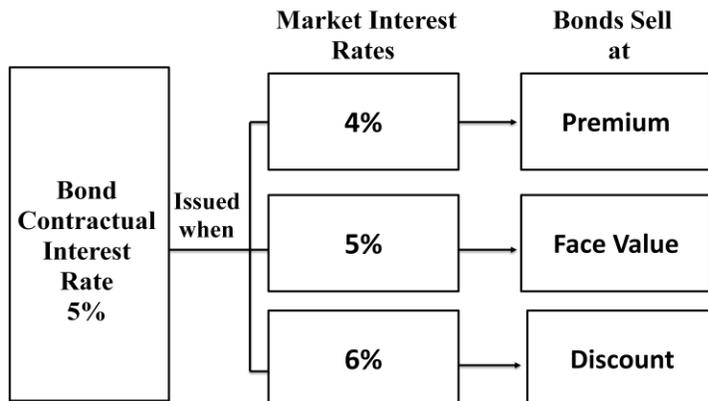
Assuming that interest is payable semi-annually on January 1 and July 1 on the bonds, interest of \$25,000 ($\$1,000,000 \times 5\% \times 6/12$) must be paid on July 1, 2003. The entry for the payment is:

Date	Account Titles and Explanation	Debit	Credit
July 1	Bond Interest Expense Cash To record payment of bond interest.	25,000	25,000

DISCOUNT OR PREMIUM ON BONDS

- Bonds may be issued below or above face value.
- If the market (effective) rate of interest is higher than the contractual (coupon) rate, the bonds will sell at less than face value, or at a discount.
- If the market rate of interest is less than the contractual rate on the bonds, the bonds will sell above face value, or at a premium.

ILLUSTRATION 16-7 INTEREST RATES AND BOND PRICES



ISSUING BONDS AT A DISCOUNT

Assume that on January 1, 2003, Candlestick Inc. sells \$1 million, 5-year, 5 percent bonds at 95.7345 (95.7345 percent of face value) with interest payable on July 1 and January 1. The entry to record the issue is:

Date	Account Titles and Explanation	Debit	Credit
Jan. 1	Cash Discount on Bonds Payable Bonds Payable To record payment of bond interest.	957,345 42,655	1,000,000

STATEMENT PRESENTATION OF BOND DISCOUNT

The Discount on Bonds Payable account has a debit balance and is deducted from Bonds Payable on the balance sheet, as illustrated below:

Long-term liabilities

Bonds payable	\$1,000,000
Less: Discount on bonds payable	<u>42,655</u>
	\$957,345

The \$957,345 represents the carrying (or book) value of the bonds. On the date of issue, this amount equals the market price of the bonds.

STRAIGHT-LINE METHOD OF BOND DISCOUNT AMORTIZATION

- To comply with the matching principle, it follows that bond discount should be allocated systematically to each accounting period benefiting from the use of the cash proceeds.
- The straight-line method of amortization of bond discount allocates the same amount to interest expense each interest period.

FORMULA FOR STRAIGHT-LINE METHOD OF BOND DISCOUNT AMORTIZATION

$$\boxed{\text{Bond Discount}} \div \boxed{\text{Number of Interest Periods}} = \boxed{\text{Bond Discount Amortization}}$$

Bond Discount Amortization Entries

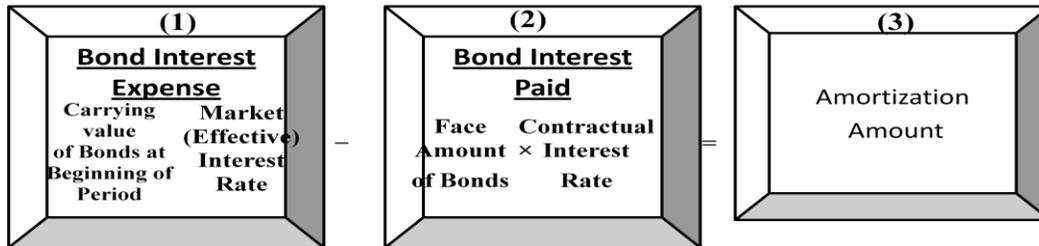
The entry to record the payment of bond interest and the amortization of bond discount on the first interest date (July 1, 2003) is:

Date	Account Titles and Explanation	Debit	Credit
July 1	Bond Interest Expense	29,265.50	
	Discount on Bonds Payable		4,265.50
	Cash		25,000.00
	To record payment of bond interest and amortization of bond discount.		

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

EFFECTIVE INTEREST METHOD OF AMORTIZATION

- The effective interest method is an alternative to the straight-line method of amortization.
- Bond interest expense is calculated by multiplying the carrying value of the bonds at the beginning of the period by the effective interest rate.
- The credit to Cash (or Bond Interest Payable) is calculated by multiplying the face value of the bonds by the contractual interest rate.
- The bond discount or premium amortization amount is then determined by comparing bond interest expense with the interest paid or accrued.



BOND DISCOUNT AMORTIZATION ENTRIES

The entry to record the payment of bond interest and the amortization of bond discount on the first interest date (July 1, 2003) is:

Date	Account Titles and Explanation	Debit	Credit
July 1	Bond Interest Expense	28,720	
	Discount on Bonds Payable		3,720
	Cash		25,000
	To record payment of bond interest and amortization of bond discount.		

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

ISSUING BONDS AT A PREMIUM

To illustrate issuing bonds at a premium, assume that on January 1, 2003, Candlestick Inc. sells \$1 million, 5-year, 5 percent bonds at 104.4915 (104.4915 percent

of face value) with interest payable on July 1 and January 1. The entry to record the issue is:

Date	Account Titles and Explanation	Debit	Credit
Jan. 1	Cash Bonds Payable Premium on Bonds Payable To record sale of bonds at a premium.	1,044,915	1,000,000 44,915

STATEMENT PRESENTATION OF BONDS PREMIUM

Premium on Bonds Payable has a credit balance and therefore is added to Bonds Payable on the balance sheet, as illustrated below:

Long-term liabilities

Bonds payable	\$100,000
Add: Premium on bonds payable	<u>\$ 44,915</u>
	\$1,044,915

The \$1,044,915 represents the carrying (or book) value of the bonds. On the date of issue, this amount equals the market price of the bonds.

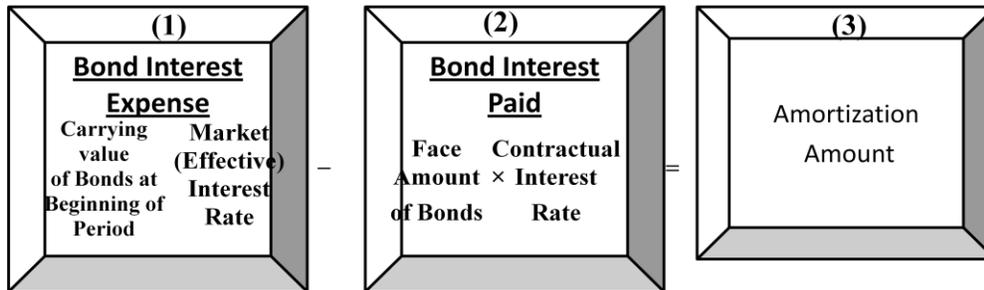
BOND PREMIUM AMORTIZATION ENTRIES

The entry to record the payment of bond interest and the amortization of bond premium using the straight-line method on the first interest date (July 1, 2003) is:

Date	Account Titles and Explanation	Debit	Credit
July 1	Bond Interest Expense Premium on Bonds Payable ($\$44,915 \div 10$) Cash To record payment of bond interest and amortization of bond premium.	20,508.50 4,491.50	25,000.00

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

EFFECTIVE INTEREST METHOD OF AMORTIZATION



BOND PREMIUM AMORTIZATION ENTRIES

The entry to record the payment of bond interest and the amortization of bond premium on the first interest date (July 1, 2003) using the effective interest method is:

Date	Account Titles and Explanation	Debit	Credit
July 1	Bond Interest Expense	20,898	
	Premium on Bonds Payable	4,102	
	Cash		25,000
	To record payment of 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 reaches zero at the maturity date of the bonds. Thus, the carrying value of the bonds at maturity will be equal to the face value of the bonds.

ISSUING BONDS BETWEEN INTEREST DATES

When bonds are issued between interest payment dates, the investor must pay the market price for the bonds plus accrued interest since the last interest date.

Assume that on March 1 Candlestick Inc. sells \$1,000,000 of 5-year, 5 percent bonds at face value plus accrued interest. Interest is payable semi-annually on July 1 and January 1. The accrued interest is \$8,333 (\$1,000,000 x 5% x 2/12). The total proceeds on the sale of bonds is \$1,008,333. The entry to record the sale is:

Date	Account Titles and Explanation	Debit	Credit
Mar. 1	Cash	1,008,333	
	Bonds Payable		1,000,000
	Bond Interest Payable		8,333
	To record sale of bonds at face value plus accrued bond interest.		

At the first interest date, it is necessary to eliminate the bond interest payable balance and to recognize the bond interest expense for the four months (March 1 to July 1) that the bonds have been outstanding.

Interest expense in this example is \$16,667 ($\$1,000,000 \times 5\% \times 4/12$). The entry on July 1 to record the first interest payment is:

Date	Account Titles and Explanation	Debit	Credit
July 1	Bond Interest Payable	8,333	
	Bond Interest Expense	16,667	
	Cash		25,000
	To record payment of bond interest.		

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 interest for the last interest period is paid and recorded separately, the entry to record the redemption of the Candlestick bonds at maturity is:

Date	Account Titles and Explanation	Debit	Credit
Jan. 1	Bonds Payable	1,000,000	
	Cash		1,000,000
	To record redemption of bonds at maturity.		

BOND RETIREMENTS

- Bonds may be redeemed before maturity because a company may decide to reduce interest cost and remove debt from its balance sheet.
- When bonds are retired before maturity it is necessary to
 - Eliminate the carrying value of the bonds at the redemption date after updating interest,
 - Record the cash paid, and
 - Recognize the gain or loss on redemption and report as other gains or other losses in the income statement.

ACCOUNTING FOR OTHER LONG-TERM LIABILITIES

- Long-term notes payable are similar to short-term interest-bearing notes payable except that the term of the note exceeds one year.
- A long-term note may be secured by a mortgage that pledges title to specific assets as security for a loan.
- Mortgage notes payable are widely used in the purchase of homes by individuals and in the acquisition of capital assets by many small and some large companies.

Balance Sheet Presentation of Bond Investments

- Such securities are classified as long-term investments under the caption ***Investments***.
- These investments are reported at their cost less any amortized premium or plus any amortized discount.
- The market (fair) value of the bond investment should be disclosed, either on the face of the balance sheet or in an accompanying note.

MORTGAGE NOTES PAAYBLE

- Mortgage notes payable are recorded initially at face value and entries are required subsequently for each instalment payment.
 - Fixed principal payment
 - Blended principal and interest
- In the balance sheet, the reduction in principal for the next year is reported as a current liability, and the remaining unpaid principal balance is classified as a long-term liability.

ILLUSTRATION 16-21 INSTALMENT PAYMENT SCHEDULE FIXED PRINCIPAL PAYMENT

To illustrate, assume that Belanger Ltd. issues a \$120,000, 7 percent, 5-year note on January 1, 2003, to obtain needed financing for the construction of a new research laboratory. The terms provide for monthly instalment payments of \$2,000 (\$120,000/60). The instalment payment schedule for the first few months is shown below:

Interest Period	(A) Cash Payment (B + C)	(B) Interest Expense (D x 7% x 1/12)	(C) (D) Reduction of Principal (120,000/60)	Principal Balance (D - C)
Issue date				\$120,000
1	\$2,700	\$ 700	\$2,000	118,000
2	2,688	688	2,000	116,000
3	2,677	677	2,000	114,000

ILLUSTRATION 16-22 INSTALMENT PAYMENT SCHEDULE BLENDED PAYMENT

To illustrate, assume that Belanger Ltd. issues a \$120,000, 7 percent, 5-year note on January 1, 2003, to obtain needed financing for the construction of a new research laboratory. The terms provide for monthly instalment payments of \$2,376. The instalment payment schedule for the first few months is shown below:

<u>Interest Period</u>	(A) Cash <u>Payment</u>	(B) Interest Expense <u>(D x 7% x 1/12)</u>	(C) Reduction of Principal <u>(A - B)</u>	(D) Principal Balance <u>(D - C)</u>
Issue date				\$120,000
1	\$2,376	\$ 700	\$1,676	118,324
2	2,376	690	1,686	116,638
3	2,376	680	1,696	114,942

LEASE LIABILITIES OPERATING LEASE

- In an operating lease the intent is temporary use of the property by the lessee with continued ownership of the property by the lessor.
- The lease (rental) payments are recorded as an expense by the lessee and as revenue by the lessor.

LEASE LIABILITIES CAPITAL LEASES

- A capital lease transfers substantially all the benefits and risks of ownership from the lessor to the lessee.
- In a capital lease, the present value of the cash payments for the lease are capitalized and recorded as an asset.

LEASE LIABILITIES CAPITAL LEASES

- The lessee must record the lease as an asset (a capital lease) if any one of the following conditions exist:
 - The lease transfers ownership of the property to the lessee (e.g., contains a bargain purchase option).
 - The lease term is equal to 75% or more of the economic life of the leased property.
 - The present value of the lease payments equals or exceeds 90% of the fair market value of the leased property.

CAPITAL LEASE ENTRIES

- The leased asset is reported on the balance sheet under capital assets.
- The portion of the lease liability expected to be paid in the next year is reported as a current liability.
- The remainder is classified as a long-term liability.
- If none of the four conditions for capitalizing a lease are met, the company does not report an asset. This procedure is referred to as off-balance sheet financing.

DEBT TO TOTAL ASSETS

The debt-to-total-assets ratio indicates the percentage of total assets owed to creditors, providing one measure of leverage. It is calculated by dividing total debt by total assets.

$$\boxed{\text{Total Debt}} \div \boxed{\text{Total Assets}} = \boxed{\text{Debt to Total Assets}}$$

INTEREST COVERAGE RATIO

The interest coverage ratio measures the company's ability to meet interest payments as they come due. It is calculated by dividing income before interest expense and income tax expense by interest expense.

$$\boxed{\begin{array}{c} \text{Net Income +} \\ \text{Interest Expense +} \\ \text{Income Tax} \\ \text{Expense} \end{array}} \div \boxed{\text{Interest Expense}} = \boxed{\text{Interest Coverage}}$$

REVIEW

1. The fiscal year of PT Rusty, a manufacturer of acoustical supplies, ends December 31. Selected transactions for the period 2007 through 2014, involving bonds payable issued by PT Rusty, are as follows:

2007

June 30 Issued Rp2.000.000.000,00 of 25-year, 7% callable bonds dated June 30, 2007, for cash of Rp1.920.000.000,00. Interest payable is semi annually on June 30 and December 31.

Dec. 31 Paid the semiannual interest on the bonds

Dec. 31 Recorded straight-line amortization of Rp1.600.000,00 of discount on the bonds

Dec. 31 Closed the interest expense account

2008

June 30 Paid the semiannual interest on the bonds

Dec. 31 Paid the semiannual interest on the bonds

Dec. 31 Recorded straight-line amortization of Rp3.200.000,00 of discount on the bonds

Dec. 31 Closed the interest expense account

2014

June 30 Recorded the redemption of the bonds, which were called at 101,5. The balance in the bond discount account is

Rp57.600.000,00 after the payment of interest and amortization of discount have been recorded. (Record the redemption only).

Instruction:

1. Journalize entries to record the preceding transaction
2. Determine the amount of interest expense for 2007 and 2008
3. Determine the carrying amount of the bonds of December 31, 2008.

Reference

Weigandt, Kieso, and Kimmel. (2005). Accounting Principles, 6th Ed. Canada: John Wiley and Sons.

Reeve, James M, Carl S. Warren and Jonathan E. Duchac. Principles of Accounting. Singapore: Cengage Learning Asia Pte Ltd. (R)