Thammasat University
Faculty of Economics
Bachelor of Economics (International Program)

AC201
Fundamental Accounting

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Course Package OY 03

Topic:
Reporting and Interpreting Bonds

Session:
Session OY 03

Instructor:
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REPORTING AND INTERPRETING BONDS

Chapter Take-Aways

1. **Describe the characteristics of bonds.**
   Bonds have a number of characteristics designed to meet the needs of both the issuing corporation and the creditor. A complete listing of bond characteristics is discussed in the chapter.
   Corporations use bonds to raise long-term capital. Bonds offer a number of advantages compared to stock, including the ability to earn a higher return for stockholders, the tax deductibility of interest, and the fact that control of the company is not diluted. Bonds do carry additional risk, however, because interest and principal payments are not discretionary.
2. **Report bonds payable and interest expense for bonds sold at par and analyze the times interest earned ratio.**
   Three types of events must be recorded over the life of a typical bond: (1) the receipt of cash when the bond is first sold, (2) the periodic payment of cash interest, and (3) the repayment of principal upon the maturity of the bond. Bonds are reported at the present value of the future cash flows specified in the bond contract. When the market interest rate and the coupon interest rate are the same, the bond will sell at par which is the same as the maturity value of the bond. The times interest earned ratio measures a company's ability to meet its interest obligations with resources from its profit-making activities. It is computed by comparing interest expense to earnings (including net income, interest expense, and income tax expense).
3. **Report bonds payable and interest expense for bonds sold at a discount.**
   Bonds are sold at a discount whenever the coupon interest rate is less than the market rate of interest. A discount is the dollar amount of the difference between the par value of the bond and its selling price. The discount is recorded as a contra-liability when the bond is sold and is amortized over the life of the bond as an adjustment to interest expense.
4. **Report bonds payable and interest expense for bonds sold at a premium.**
   Bonds are sold at a premium whenever the coupon interest rate is more than the market rate of interest. A premium is the dollar amount of the difference between the selling price of the bond and its par value. The premium is recorded as a liability when the bond is sold and is amortized over the life of the bond as an adjustment to interest expense.
5. **Analyze the debt-to-equity ratio.**
   The debt-to-equity ratio compares the amount of capital supplied by creditors to the amount supplied by owners. It is a measure of a company's debt capacity. It is an important ratio because of the high risk associated with debt capital that requires obligatory interest and principal payments.
6. **Report the early retirement of bonds.**
   A corporation may retire bonds before their maturity date. The difference between the book value and the amount paid to retire the bonds is reported as a gain or loss, depending on the circumstances.
7. **Explain how financing activities are reported on the statement of cash flows.**
   Cash flows associated with transactions involving long-term creditors are reported in the Financing Activities section of the statement of cash flows. Interest expense is reported in the Operating Activities section.

Key Ratios

Times interest earned ratio measures a company's ability to generate resources from current operations to meet its interest obligations. The ratio is computed as follows:

Times Interest Earned = (Net Income + Interest Expense + Income Tax Expense) ÷ Interest Expense

Debt-to-equity ratio measures the balance between debt and equity. Debt funds are viewed as being riskier than equity funds. The ratio is computed as follows:

Debt-to-Equity = Total Liabilities ÷ Stockholders' Equity

Finding Financial Information

Balance Sheet

Under Current Liabilities

Bonds are normally listed as long-term liabilities. An exception occurs when the bonds are within one year of maturity. Such bonds are reported as current liabilities with the following title: Current portion of long-term debt

Under Noncurrent Liabilities

Bonds are listed under a variety of titles, depending on the characteristics of the bond. Titles include:

- Bonds payable
- Debentures
- Convertible bonds

Statement of Cash Flows

Under Financing Activities

+ Cash inflows from long-term creditors
– Cash outflows to long-term creditors

Under Operating Activities

The cash outflow associated with interest expense is reported as an operating activity.

Income Statement

Bonds are shown only on the balance sheet, never on the income statement. Interest expense associated with bonds is reported on the income statement. Most companies report interest expense in a separate category on the income statement.

Notes

Under Summary of Significant Accounting Policies

Description of pertinent information concerning accounting treatment of liabilities. Normally, there is minimal information. Some companies report the method used to amortize bond discounts and premiums.

Under a Separate Note

Most companies include a separate note called "Long-Term Debt" that reports information about each major debt issue, including amount and interest rate. The note also provides detail concerning debt covenants.

Chapter Outline	**Notes**
LO 1 – Describe the characteristics of bonds.	

I. Characteristics of Bonds Payable

A. Issued to raise money for long-term purposes

1. Advantages:
   a. Stockholders maintain control; bondholders do not vote or share in the company's earnings
   b. Interest expense is tax-deductible; dividends paid on stock are not tax deductible
   c. Impact on earnings is positive; money can often be borrowed at a low interest rate and invested at a higher rate
2. Disadvantages:
   a. Risk of bankruptcy; interest payments to bondholders are fixed charges that must be paid each period
   b Negative impact on cash flows; debt must be repaid at a specified time in the future

B. Terminology

1. Bond principal – Amount (a) payable at the maturity of the bond and (b) on which the periodic cash interest payments are computed
2. Par value – Another name for bond principal, or the maturity amount of a bond
3. Face amount – Another name for bond principal, or the maturity amount of the bond
4. Stated rate – Rate of cash interest per period stated in the bond contract
5. Indenture – Bond contract that specifies the legal provisions of a bond issue' provisions include:
   a. Maturity date
   b. Rate of interest to be paid
   c. Date of each interest payment, and any conversion privileges
   d. Covenants designed to protect the creditors; typical indentures include:
      i. Limitations on new debt that the company might issue in the future
      ii. Limitations on the payment of dividends
      iii. Requirements for minimums of certain accounting ratios
6. Covenants are reported in notes to financial statements

7. Types of bonds:
   a. Debenture – Unsecured bond; no assets are specifically pledged to guarantee repayment
   b. Secured bond – Specific assets are pledged as a guarantee of repayment at maturity
   c. Callable bond – May be called for early retirement at the option of the issuer
   d. Convertible bond – May be converted to other securities of the issuer (usually common stock)
8. Bond certificate – Bond document that each bondholder receives
9. Trustee – Independent party appointed to represent the bondholders

C. Risk
1. Default risk – the probability that a bond issuer will not be able to meet the requirements specified in the indenture
2. Moody's and Standard & Poor's (agencies that evaluate default risk) use letter ratings to specify the quality of a bond
   a. Investment grade – bonds with ratings above Baa/BBB are investment grade
   b. Junk bonds – bonds with ratings below that level are speculative

LO 2 – Report bonds payable and interest expense for bonds sold at par and analyze the times interest earned ratio.

II. Reporting Bond Transactions

A. Cash Payments in Bond Contract
1. Principal is payable at the maturity of the bond
2. Cash Interest Payments:
   a. Contract, stated, or coupon rate of interest – Interest rate stated in bond contract; used to compute cash interest payments
   b. Cash interest payments are computed by multiplying the principal amount times the interest rate stated in the bond contract
   c. Bond contract specifies whether the interest payments are made quarterly, semiannually, or annually

B. Issue Price
1. Market interest rate (or yield or effective-interest rate) – the rate of interest currently being demanded by creditors interest to compensate them for the risks related to bonds
   a. The interest rate on debt when it is incurred
   b. The rate that should be used in computing the present value of a bond

2. Impact of interest rates on issuance price:
   a. If the stated and the market interest rates are the same, a bond sells at par – issuer receives cash equal to its par value
   b. If the market rate is higher than the stated rate, a bond sells at a discount – issuer receives less cash than the par value
   c. If the market rate is lower than the stated rate, the bond sells at a premium – issuer receives more cash than the par value

B. Bonds Issued at Par

1. On 1/1/14, BNSF issued 10% bonds with a par value of $100,000 and received $100,000 in cash; the market rate of interest was also 10%, and the bonds will pay interest each 6/30 and 12/31 and mature on 12/31/15
   a. Present value:

Single payment: $100,000 × 0.8227	$ 82,270
Annuity: $5,000 × 3.5460	17,730
Issue price	$100,000

   b. Journal entry:

Dr. Cash (+A)	100,000	
Cr. Bonds Payable (+L)		100,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) + 100,000 = Bond Payable (L) + 100,000

2. Reporting Interest on Bonds Issued at Par
   a. The amount of interest each period will be $5,000 (10% × $100,000 × 1/2)
   b. Journal entry:

Dr. Interest Expense (+E, –SE)	5,000	
Cr. Cash (–A)		5,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) – 5,000 = Interest Expense (E) – 5,000
   c. Interest expense is reported as a deduction from operating income on the income statement
   d. Under the matching concept, interest expense incurred but not paid must be accrued with an adjusting entry

C. Key Ratio Analysis: Times Interest Earned Ratio

1. Times Interest Earned Ratio = (Net Income Sales + Interest Expense + Income Tax Expense) ÷ Interest Expense
2. Ratio measures whether the company generating sufficient resources from its profit-making activities to meet its current interest obligations
3. A high ratio is viewed more favorably; indicates an extra margin of protection in case profitability deteriorates
4. Ratio is often misleading for new or rapidly growing companies, which tend to invest considerable resources to build their capacity for future operations

LO 3 – Report bonds payable and interest expense for bonds sold at a discount.

E. Bonds Issued at a Discount

1. Bonds sell at a discount when the market rate of interest is higher than the stated interest rate
2. On 1/1/14, BNSF issued 10% bonds with a par value of $100,000 and received $100,000 in cash; the market rate of interest was 12%, and the bonds will pay interest each 6/30 and 12/31 and mature on 12/31/15
   a. Present value:

Single payment: $100,000 × 0.7921	$79,210
Annuity: $5,000 × 3.4651	34,651
Issue price	$96,536

   b. Journal entry:

Dr. Cash (+A)	96,536	
Discounts on Bonds (+XL, –L)	3,464	
Cr. Bonds Payable (+L)		100,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) + 96,536 = Bond Payable (L) + 100,000 + Discounts on Bonds (XL) – 3,464
   c. Discount is recorded in a separate contra-liability account (Discount on Bonds Payable) as a debit
   d. Balance sheet reports the bonds payable at their book value, which is their maturity amount less any unamortized discount
3. BNSF received only $96,536 when it sold the bonds, but must repay $100,000 at maturity; the extra cash that must be paid is an adjustment of interest expense
   a. To adjust interest expense, the borrower amortizes the bond discount to each interest period as an increase in interest expense (that is, the amortization of bond discount results in an increase in interest expense)
   b. Two amortization methods:
      i. Straight-line – many companies use; easy
      ii. Effective interest – required by GAAP
4. Part A: Straight-line Amortization
   a. Straight-line amortization – simplified method of amortizing a bond discount or premium that allocates an equal dollar amount to each interest period
   b. The amortization of discount each period is: $3,464 ÷ 4 periods = $866

Dr. Interest Expense (+E, –SE)	5,866	
Cr. Discounts on Bonds (–XL, +L)		866
Cash (–A)		5,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) – 5,000 = Discounts on Bonds (XL) + 866 + Interest Expense (E) – 5,866

c. Impact on Discount on Bonds account:
   i. In each interest period, book value of bonds increases by $866 because the unamortized discount decreases by $866
   ii. At the maturity date of the bonds:
      - The unamortized discount (i.e., balance in the Discount on Bonds Payable account) is zero
      - The maturity amount of the bonds and the book value are the same (i.e., $100,000)

5. Part B: Effective-interest Amortization

a. Effective-interest amortization – method of amortizing a bond discount or premium on the basis of the effective-interest rate; theoretically preferred method

b. Two steps:
   i. Compute interest expense:
   Beginning Book Value × Market Interest Rate × n/15; n = # of months in each interest period
   ii. Compute amortization amount:
   Interest Expense – Cash Interest

c. First interest payment on BNSF bonds is on 6/30/14:
Interest expense = $96,536 × 12% × 1/2 = $5,792
Amortization amount = $5,792 – $5,000 = $792

Dr. Interest Expense (+E, –SE)	5,792	
Cr. Discounts on Bonds (–XL, +L)		792
Cash (–A)		5,000

Assets = Liabilities + Stockholders' Equity
Cash (A) – 5,000 = Discounts on Bonds (XL) + 792 + Interest Expense (E) – 5,792

d. Second interest payment on BNSF bonds is on 12/31/14:
Beginning book value = $96,536 + $792= $97,328
Interest expense = $97,328 × 12% × 1/2 = $5,840
Amortization amount = $5,840 – $5,000 = $840

Dr. Interest Expense (+E, –SE)	5, 840	
Cr. Discounts on Bonds (–XL, +L)		840
Cash (–A)		5,000

Assets = Liabilities + Stockholders' Equity
Cash (A) – 5,000 = Discounts on Bonds (XL) + 840 + Interest Expense (E) – 5,840

e. Because of amortization of the bond discount, interest expense increases each year during life of bond

LO 4 – Report bonds payable and interest expense for bonds sold at a premium.

F. Bonds Issued at a Premium

1. Bonds sell at a premium when the market rate of interest is lower than the stated interest rate
2. On 1/1/14, BNSF issued 10% bonds with a par value of $100,000 and received $100,000 in cash; the market rate of interest was 8%, and the bonds will pay interest each 6/30 and 12/31 and mature on 12/31/15
   a. Present value:

Single payment: $100,000 × 0.8548	$ 85,480
Annuity: $5,000 × 3.6299	18,150
Issue price	$103,630

   b. Journal entry:

Dr. Cash (+A)	103,630	
Premium on Bonds Payable (+L)		3,630
Cr. Bonds Payable (+L)		100,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) + 103,630 = Bond Payable (L) + 100,000 + Premium on Bonds Payable (L) + 3,630
   c. Premium is recorded in a separate liability account (Premium on Bonds Payable) as a credit
   d. Balance sheet reports the bonds payable at their book value, which is their maturity amount plus any unamortized premium
3. BNSF received $103,630 when it sold the bonds, but must repay only $100,000 at maturity; the difference is an adjustment of interest expense
4. Part A: Straight-line Amortization
   b. The amortization of premium each period is: $3,630 ÷ 4 periods = $908

Dr. Interest Expense (+E, –SE)	4,092	
Cr. Premium on Bonds Payable (–L)		908
Cash (–A)		5,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) – 5,000 = Premium on Bonds (L) – 908 + Interest Expense (E) – 4,092
   c. Impact on Premium on Bonds account:
      i. In each interest period, book value of bonds decreases by $908 because the unamortized discount decreases by $908
      ii. At the maturity date of the bonds:
         - The unamortized discount (i.e., balance in the Premium on Bonds Payable account) is zero
         - The maturity amount of the bonds and the book value are the same (i.e., $100,000)

5. Part B: Effective-interest Amortization
   a. First interest payment on BNSF bonds is on 6/30/14:
   Interest expense = $103,630 × 8% × 1/2 = $4,145
   Amortization amount = $5,000 – $4,145 = $855

Dr. Interest Expense (+E, –SE)	4,145	
Premium on Bonds Payable (–L)	855	
Cr. Cash (–A)		5,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) – 5,000 = Premium on Bonds (L) + 855 + Interest Expense (E) – 4,145
   b. Second interest payment on BNSF bonds is on 12/31/14:
   Beginning book value = $103,630 + $855 = $102,775
   Interest expense = $102,775 × 8% × 1/2 = $4,111
   Amortization amount = $5,000 – $4,111 = $889

Dr. Interest Expense (+E, –SE)	4,111	
Premium on Bonds Payable (–L)	889	
Cr. Cash (–A)		5,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) – 5,000 = Premium on Bonds Payable (L) + 889 + Interest Expense (E) – 4,111
   c. Because of amortization of the bond premium, interest expense decreases each year during life of bond

LO 5 – Analyze the debt-to-equity ratio.

G. Key Ratio Analysis: Debt-to-Equity Ratio
1. Debt-to-Equity Ratio = Total Liabilities ÷ Stockholders' Equity
2. Ratio measures the relationship between the amount of capital provided by owners and the amount provided by creditors
3. A high ratio suggests that a company relies heavily on funds provided by creditors; heavy reliance on creditors increases risk that a company may not be able to meet its contractual financial obligations during a business downturn

LO 6 – Report the early retirement of bonds.

H. Early Retirement of Debt
1. Bondholders can sell the bonds to investors; transaction does not affect the books of the issuer of the bonds
2. A corporation may retire bonds before maturity
   a. Bond with a call feature may be called in for early retirement at the issuer's option
   b. Bond indenture includes a call premium for bonds retired before the maturity date

3. Several years ago, BNSF issued bonds in the amount of $1 million at par; BNSF called the bonds at102% of par

Dr. Bonds Payable (–L)	1,000,000	
Cr. Loss on Bond Call (+E, –SE)		20,000
Cash (–A)		1,020,000

Assets = Liabilities + Stockholders' Equity
Cash (A) – 1,020,000 = Bonds Payable (L) – 1,000,000 + Loss on Bond Call – 20,000

4. A company may elect to retire debt early by purchasing it on the open market
   a. Necessary when the bonds do not have a call feature
   b. This might also be an attractive approach if the price of the bonds were to fall after the date of issue

LO 7 – Explain how financing activities are reported on the statement of cash flows.

H. Focus on Cash Flows: Bonds Payable
1. The cash proceeds from the issuance of bonds is added in computing cash flows from financing activities
2. The cash used to repay bond principal upon maturity (or retire bonds) is subtracted in computing cash flows from financing activities
4. The payment of interest is not reported in the financing activities section
   a. Reported in the cash flows from operating activities section
   b. GAAP also requires that companies report the amount of cash paid for interest expense during the period

IV. Chapter Supplement A: Bond Calculations Using Excel
A. Because a bond involves two types of payments, you can compute the present value of each type of payment and add them together
B. Alternatively, you can use a Excel to compute the present value of a bond
1. Use the present value function programmed in Excel by selecting the function button (fx)
2. In drop down box, type description "present value" and click "Go" button
3. On next screen, highlight PV, click "OK"; enter specific information for problem, and click "OK"

V. Chapter Supplement B: Bonds Issued at a Discount (Without Discount Account)

A. Bonds Issued at a Discount (Without Discount Account)

1. Issuance

a. On 1/1/14, BNSF issued 10% bonds with a par value of $100,000 and received $100,000 in cash; the market rate of interest was 12%, and the bonds will pay interest each 6/30 and 12/31 and mature on 12/31/15

b. Present value:

Single payment: $100,000 × 0.7921	$79,210
Annuity: $5,000 × 3.4651	34,651
Issue price	$96,536

c. Journal entry:

Dr. Cash (+A)	96,536	
Cr. Bonds Payable (+L)		96,536

Assets = Liabilities + Stockholders' Equity
Cash (A) + 96,536 = Bond Payable (L) + 96,536

2. Reporting Interest Expense on Bonds Issued at a Discount Using Effective-Interest Amortization

a. First interest payment on BNSF bonds is on 6/30/14:
Interest expense = $96,536 × 12% × 1/2 = $5,792
Amortization amount = $5,792 – $5,000 = $792

Dr. Interest Expense (+E, –SE)	5,792	
Cr. Bonds Payable (+L)		792
Cash (–A)		5,000

Assets = Liabilities + Stockholders' Equity
Cash (A) – 5,000 = Bonds Payable (L) + 792 + Interest Expense (E) – 5,792

b. Second interest payment is on 12/31/14:
Beginning book value = $96,536 + $792= $97,328
Interest expense = $97,328 × 12% × 1/2 = $5,840
Amortization amount = $5,840 – $5,000 = $840

Dr. Interest Expense (+E, –SE)	5, 840	
Cr. Bonds Payable (+L)		840
Cash (–A)		5,000

Assets = Liabilities + Stockholders' Equity
Cash (A) – 5,000 = Bonds Payable (L) + 840 + Interest Expense (E) – 5,840

B. Bonds Issued at a Premium (Without Premium Account)

1. Issuance

a. On 1/1/14, BNSF issued 10% bonds with a par value of $100,000 and received $100,000 in cash; the market rate of interest was 8%, and the bonds will pay interest each 6/30 and 12/31 and mature on 12/31/15

b. Present value:

Single payment: $100,000 × 0.8548	$ 85,480
Annuity: $5,000 × 3.6299	18,150
Issue price	$103,630

c. Journal entry:

Dr. Cash (+A)	103,630	
Cr. Bonds Payable (+L)		103,630

Assets = Liabilities + Stockholders' Equity
Cash (A) + 103,630 = Bond Payable (L) + 103,630

2. Reporting Interest Expense on Bonds Issued at a Premium Using Effective-Interest Amortization
   a. First interest payment on BNSF bonds is on 6/30/14:
   Interest expense = $103,630 × 8% × 1/2 = $4,145
   Amortization amount = $5,000 – $4,145 = $855

Dr. Interest Expense (+E, –SE)	4,145	
Premium on Bonds Payable (–L)	855	
Cr. Cash (–A)		5,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) – 5,000 = Premium on Bonds (L) + 855 + Interest Expense (E) – 4,145
   b. Second interest payment on BNSF bonds is on 12/31/14:
   Beginning book value = $103,630 + $855 = $102,775
   Interest expense = $102,775 × 8% × 1/2 = $4,111
   Amortization amount = $5,000 – $4,111 = $889

Dr. Interest Expense (+E, –SE)	4,111	
Bonds Payable (–L)	889	
Cr. Cash (–A)		5,000

   Assets = Liabilities + Stockholders' Equity
   Cash (A) – 5,000 = Premium on Bonds Payable (L) + 889 + Interest Expense (E) – 4,111

REPORTING AND INTERPRETING BONDS

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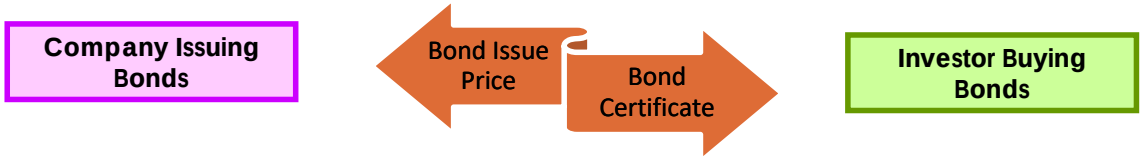
Bonds Payable

- **A bond is a security, usually long term, representing money that a corporation borrows from the investing public.**
  - A bond entails a promise to repay the amount borrowed, called the par value or principal, on a specified date and to pay interest at a specified rate at specified times – usually semiannually.
  - In contrast to shareholders, who are the owners of a corporation, bondholders are a corporation's creditors.

Bonds Payable (Cont.)

- **Bonds payable:**
  - A bond is simply a form of an interest-bearing note. A bond requires periodic interest payments , and the par value must be repaid at the maturity date. The bondholders are creditors of the issuing corporation and their claims on the assets of the corporation rank ahead of shareholders.

At Bond Issuance Date

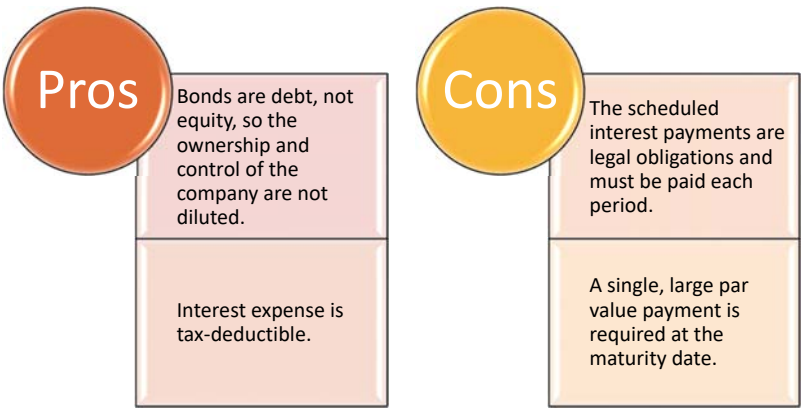


Bonds payable are long-term debt for the issuing company.

During the Bonds' Life

Pros and Cons

- **Bond: A contract between a borrower promises to pay a specified rate of interest for each period the bond is outstanding and repay the principal at the maturity date.**



Good to know…

Bond was first introduced in Thailand during the reign of King Rama the 5th in 1905. The bearer bond represented a loan of one million pounds in London and Paris. The proceeds were used for the railroad development project, and as a reserve for economic expansion. A bearer bond is an unregistered bond on which the interest and principal are payable to the current holder of the bond regardless of whom it was originally issued to. The issued bonds were to mature in 40 years, accompanied by an annual interest rate of 4.5 percent. The interest payments were paid on a semi-annual basis, September 1st and March 1st.

The Nature of Bonds (Cont.)

- **Bond Issue: Prices and Interest Rates**
  - A bond issue is the total value of bonds issued at one time.
  - Stated interest rate and market interest rate:
    - The stated interest rate is the fixed rate of interest paid to bondholders based on the par value of the bonds. The rate and amount are fixed over the life of the bond.
    - The market interest rate is the rate of interest paid in the market on bonds of similar risk. It is also called the effective interest rate.
- **Discount and Premiums**
  - The fluctuation in market interest rate causes the bonds to sell at either a discount or a premium.
    - A discount equals the exceeds of the par value over the issue price.
      - The issue price will be less than the par value when the market interest rate is higher than the stated interest rate.
    - A premium equals the excess of the issue price over the par value.
      - The issue price will be more than the par value when the market interest rate is lower than the stated interest rate.

Characteristics of Bonds

- **Unsecured and secured bonds**
  - Unsecured bonds (also called debenture bonds) are issued on the basis of a corporation's general credit.
  - Secured bonds carry a pledge of certain corporate assets as a guarantee for repayment.
- **Term and serial bonds**
  - When all the bonds of an issue mature at the same time. They are called term bonds.
  - When the bonds of an issue mature on different dates, they are called serial bonds.
- **Callable and convertible bonds**
  - Callable bonds give the issuer the right to buy back and retire the bonds before maturity at a specified call price, which is usually above par value.
  - Convertible bonds allow the bondholder to exchange a bond for a specified number of shares of ordinary share.
- **Registered and coupon bonds**
  - Registered bonds are issued in the names of the bondholders.
  - Coupon bonds are not registered with the organization. Instead, they bear coupons stating the amount of interest due and the payment date.

Example

- **Par Value = Principal = Face value: ฿1,000,000**
- **Stated interest rate = Coupon rate = Contract rate: 10% (an annual rate)**
- **Interest payment schedule: Annually, Semi-annually, Quarterly, Monthly**
  - Interest payment dates: Jun. 30 and Dec. 31
- **Date of issuance: Jan. 1, 20X1**
- **Bond life: 10 years**
- **Maturity date: Dec. 31, 20X10**

Market interest rate = Yield = Effective interest rate: ???

Future Cash Flows on the Bonds

Cash interest payment
= Par value x Stated rate x Time
= 1,000,000 x 10% x 6/12
= 50,000

Statement of Financial Position
Noncurrent liabilities:
Bonds @ par
Less: Bond discount
Add: Bond premium
= Bonds, net

Jan. 1, X1

Price ???

50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K
50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K | 50 K

Interest

Dec. 31, X10

Case #1: Market interest rate = 10%	Future cash flows	PV factor (n=20, i=5%)	Amount
Present value of the principal	1,000,000	0.37689	376,890
+ Present value of the interest	50,000	12.46221	623,111
= Bond price			1,000,001

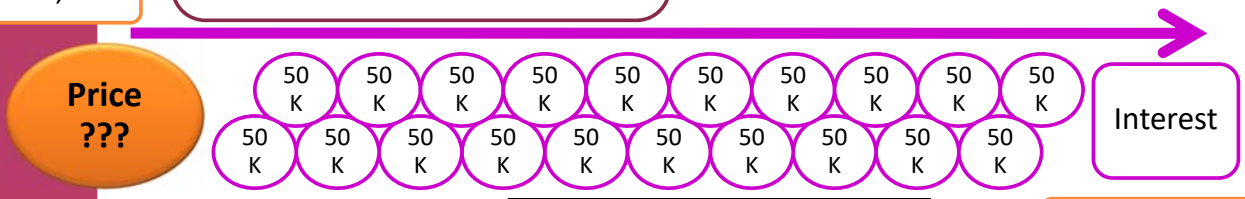
Date	General Journal	Debit	Credit
1/1/X1	Dr. Cash (@price)	1,000,000	
	Cr. Bonds payable (@par)		1,000,000

1,000,000 — Par value

Future Cash Flows on the Bonds

Cash interest payment
= Par value x Stated rate x Time
= 1,000,000 x 10% x 6/12
= 50,000

Jan. 1, X1



Case #2: Market interest rate = 8%	Future cash flows	PV factor (n=20, i=4%)	Amount
Present value of the principal	1,000,000	0.45639	456,390
+ Present value of the interest	50,000	13.59033	679,517
= Bond price			1,135,907

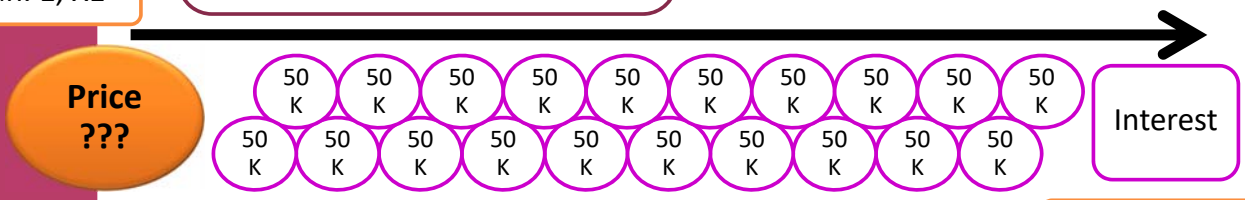
Date	General Journal	Debit	Credit
1/1/X1	Dr. Cash (@price)	1,135,907	
	Cr. Bonds payable (@par)		1,000,000
	Bond premium		135,907

1,000,000 — Par value

Future Cash Flows on the Bonds

Cash interest payment
= Par value x Stated rate x Time
= 1,000,000 x 10% x 6/12
= 50,000

Jan. 1, X1



Case #3: Market interest rate = 12%	Future cash flows	PV factor (n=20, i=6%)	Amount
Present value of the principal	1,000,000	0.3118	311,800
+ Present value of the interest	50,000	11.46992	573,496
= Bond price			885,296

Date	General Journal	Debit	Credit
1/1/X1	Dr. Cash (@price)	885,296	
	Bond discount	114,704	
	Cr. Bonds payable (@par)		1,000,000

1,000,000 — Par value

Company A issued the following bonds:
Par value: ฿1,000,000
Stated interest rate: 10%
Interest payment dates: Semiannual interest payments on Jun. 30 and Dec. 31.
Issuance date: January 1, 20X1
Maturity date: December 31, 20X10
Bond life: 10 years

Bonds issued at premium:

Market interest rate 8%

- PV of par value ฿1,000,000 x PVF (n=20, i=4%) 0.45639 = ฿456,390
- PV of interest ฿50,000 x PVAF (n=20, i=4%) 13.59033 = ฿679,516
- Bonds issue price ฿ 456,390 + ฿679,516 = ฿1,135,906
- Bonds premium = ฿1,135,906 – ฿1,000,000 = ฿135,906

Bonds issued at par:

Market interest rate 10%

- PV of par value ฿1,000,000 x PVF (n=20, i=5%) 0.37689 = ฿376,890
- PV of interest ฿50,000 x PVAF (n=20, i=5%) 12.46221 = ฿623,110
- Bonds issue price ฿376,890 + ฿623,110 = ฿1,000,000
- No bonds premium or discount

Bonds issued at discount:

Market interest rate 12%

- PV of par value ฿1,000,000 x PVF (n=20, i=6%) 0.31180 = ฿311,800
- PV of interest ฿50,000 x PVAF (n=20, i=6%) 11.46992 = ฿573,496
- Bonds issue price ฿ 311,800 + ฿573,496 = ฿885,296
- Bonds discount = ฿1,000,000 - ฿885,296 = ฿114,704

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Bond par

Bond discount: The difference between selling price and par value when a bond is sold for less than par value.

Bond premium: The difference between selling price and par value when a bond is sold for more than par value.

Bonds	Principal	Stated interest rate	Interest payment periods	Market interest rate	Bond Life	Bond price
Bond #1	1,000,000	10%	Semiannually	6%	4 years	Premium
Bond #2	1,000,000	12%	Quarterly	10%	2 years	Premium
Bond #3	1,000,000	8%	Annually	10%	10 years	Discount

Bond #1	Future cash flows	PV factor (n=8, i=3%)	Amount
Present value of the principal	1,000,000	0.78941	789,410
+ Present value of the interest (1,000,000 x 10% x 6/12)	50,000	7.01969	350,985
= Bond price			1,140,395

Bond #2	Future cash flows	PV factor (n=8, i=2.5%)	Amount
Present value of the principal	1,000,000	0.82075	820,750
+ Present value of the interest (1,000,000 x 12% x 3/12)	30,000	7.17014	215,104
= Bond price			1,035,854

Bond #3	Future cash flows	PV factor (n=10, i=10%)	Amount
Present value of the principal	1,000,000	0.38554	385,540
+ Present value of the interest (1,000,000 x 8% x 12/12)	80,000	6.14457	491,566
= Bond price			877,106

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Entry at issuance

Date	General Journal	Debit	Credit
1/1/X1	Dr. Cash (@price)	1,140,395	
	Cr. Bonds payable (@par)		1,000,000
	Bond premium		140,395

Date	General Journal	Debit	Credit
1/1/X1	Dr. Cash (@price)	1,035,854	
	Cr. Bonds payable (@par)		1,000,000
	Bond premium		35,854

Date	General Journal	Debit	Credit
1/1/X1	Dr. Cash (@price)	877,106	
	Bond discount	122,894	
	Cr. Bonds payable (@par)		1,000,000

Accounting for the Issuance of Bonds -- @ Par

- **Bonds issued at par value:**
  - The Company issues 100,000 Baht of 9 percent, five-year bonds on January 1, 20X6, and sells them on the same date for their par value. The bond indenture states that interest to be paid on January 1 and July 1 of each year. The entry to record the bond issue is as follows:

Date	General Journal	Debit	Credit
Jan. 1, 20X6	Dr. Cash [A+]	100,000	
	Cr. Bonds payable [L+]		100,000
	Sold 100,000 Baht of 9%, 5-year bonds at face value		

Accounting for the Issuance of Bonds -- @ Par (Cont.)

- Once a Company issues bonds, it must pay interest to the bondholders over the life of the bonds, usually semiannually, and the par value of the bonds at maturity. The interest paid on January 1 and July 1 of each year. Thus, the Company would owe the bondholders 4,500 Baht interest on July 1, 20X6:
  - Interest = Principal x Stated interest rate x Time
    = 100,000 x 9% x 6/12
    = 4,500 Baht
- The Company would record the interest paid to the bondholders on each semiannual interest payment date (January 1 and July 1) as follows:

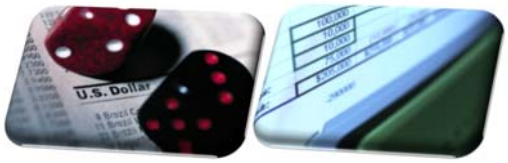
Date	General Journal	Debit	Credit
July 1, 20X6	Dr. Interest expense [Exp+, E-]	4,500	
	Cr. Cash [A-]		4,500
	Paid semiannual interest to bondholders of 9%, 5-year bonds		

Note that, on December 31, the Company must record the accrued interest to interest payable .

Accounting for the Issuance of Bonds -- @ Par (Cont.)

- Upon maturity, the par value must be paid back to the bondholders. The entry to record the par value paid is as follows:

Date	General Journal	Debit	Credit
Jan. 1, 20X11	Dr. Bonds payable [L-]	100,000	
	Cr. Cash [A-]		100,000
	Paid 100,000 Baht par value to bondholders at maturity		



Accounting for the Issuance of Bonds -- @ Discount

- **Bonds issued at a discount:**
  - The Company issues 100,000 Baht of 9 percent, five-year bonds at 96.149 on January 1, 20X6, when the market interest rate is 10 percent. In this case, the bonds are being issued at a discount because the market interest rate exceeds the stated interest rate. The following entry records the issuance of the bonds at a discount:

Date	General Journal	Debit	Credit
Jan. 1, 20X6	Dr. Cash [A+]	96,149	
	Bonds discount [Contra L+, L-]	3,851	
	Cr. Bonds payable [L+]		100,000
	Sold 100,000 Baht of 9%, 5-year bonds at 96.149		
	Par value of the bonds	*100,000*	
	Less: Issue price of bonds (100,000 x 96.149)	*96,149*	
	Discount on bonds payable	***3,851***	

Accounting for the Issuance of Bonds -- @ Discount (Cont.)

- In this entry, cash is debited for the amount received (96,149 Baht), bonds payable is credited for the face amount (100,000 Baht) of the bond liability, and the difference (3,851 Baht) is debited to bonds discount.
- If the statement of financial position is prepared right after the bonds are issued at a discount, the liability for bonds payable is reported as follows:

Long-term liabilities		
9% bonds payable, due 1/1/2011	100,000	
Less: Bonds discount	3,851	96,149

  - bonds discount is a ***contra-liability account***. Its balance is deducted from the face amount of the bonds to arrive at the carrying amount, or present value, of the bonds. The bond discount balance at a given point in time is unamortized balance and it will be amortized (written off) over the life of the bonds.

Accounting for the Issuance of Bonds -- @ Premium

- **Bonds issued at a premium:**
  - When bonds have a stated interest rate above the market rate for similar investments, they are issued at a price above the par value, or at a premium.
    - The Company issues 100,000 Baht of 9 percent, five-year bonds for 104,100 Baht on January 1, 20X6, when the market interest rate is 8 percent. This means that investors will purchase the bonds at 104.10 percent of their par value. The issuance would be recorded as follows:

Date	General Journal	Debit	Credit
Jan. 1, 20X6	Dr. Cash [A+]	104,100	
	Cr. Bonds payable [L+]		100,000
	Bonds premium [Adjunct L+, L+]		4,100
	Sold 100,000 Baht of 9%, 5-year bonds at 104.10		
	Issue price of bonds (100,000 x 104.10)	*104,100*	
	Less: Par value of the bonds	*100,000*	
	Premium on bonds payable	***4,100***	

Accounting for the Issuance of Bonds -- @ Premium (Cont.)

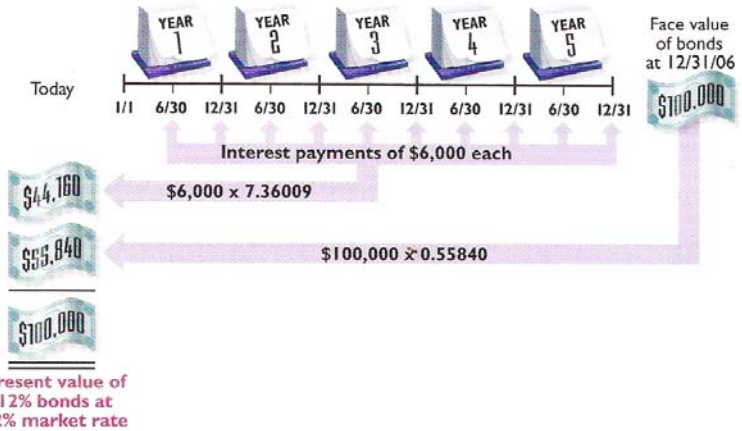
- Right after this entry is made, bonds payable would be presented on the statement of financial position as follows:

Long-term liabilities		
9% bonds payable, due 1/1/2011	100,000	
Add: Bonds premium	4,100	104,100

  - The carrying amount of the bonds payable is 104,100 Baht, which equals the par value of the bonds plus the bonds premium. The cash received from the bond issue is also 104,100 Baht. This means that the purchasers were willing to pay a premium of 4,100 Baht to buy these bonds because their stated interest rate was higher than the market interest rate.

Using Present Value to Value a Bond

- **A bond's value is based on the present value of two components of cash flows:**
  - (1) a series of fixed interest payments, and
  - (2) a single payment at maturity.
    - The amount of interest a bond pays is fixed over its life. However, the market interest rate varies from day to day. Thus, the amount investors are willing to pay for a bond varies as well.



Bonds Issue Price

The issue price of the bond is determined by the market, based on the time value of money.

Present Value of the Principal (a single payment)
+ Present Value of the Interest Payments (an annuity)
= Issue Price of the Bond

The interest rate used to compute the present value is the *market interest rate*. The *stated rate*, or *coupon rate*, is only used to compute the periodic interest payments.

Interest = Principal × Stated Rate × Time

Face value Stated interest rate	Issue price Market interest rate
↓	↓
Used only to determine cash payments	Used only to determine the bond liabilities and interest expense

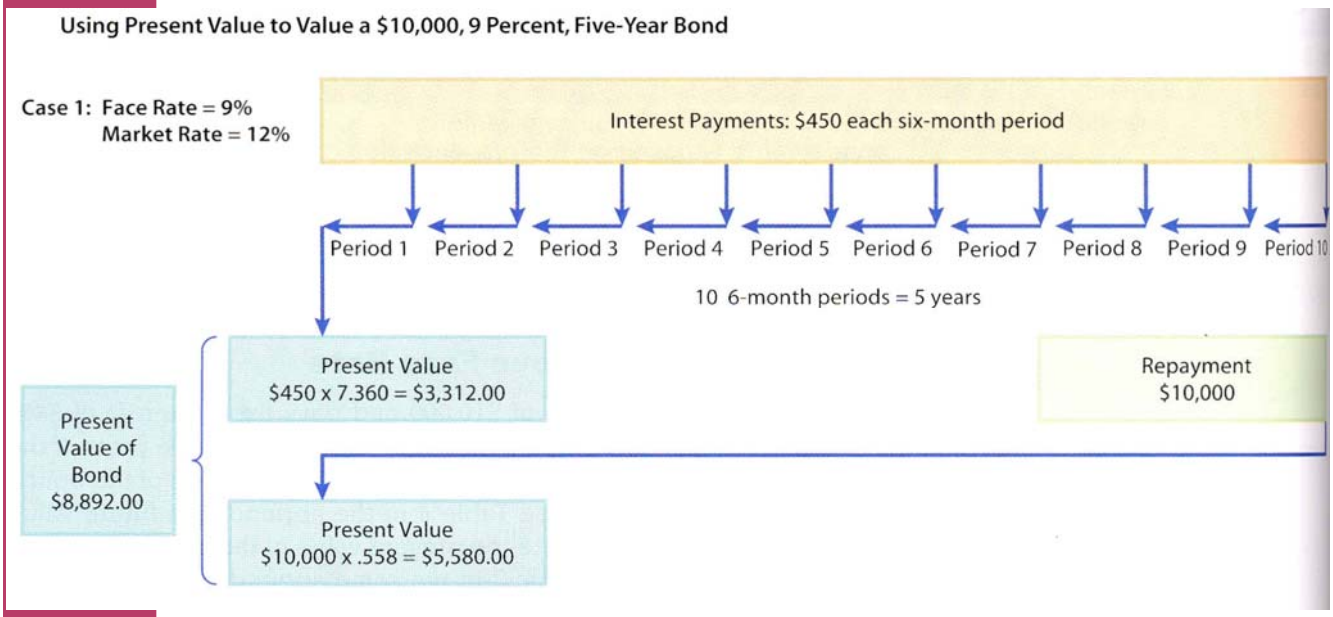
Case 1: Market Rate Above Stated Rate

- **Example:**
  - Suppose a bond has a par value of 10,000 Baht and pays fixed interest of 450 Baht every six months (a 9 percent annual rate). The bonds is due in five years. If the market interest rate today is 12 percent, what is the present value of the bond?
    - Financial calculator:
      - FV = 10,000, I = 6%, n = 10 → PV = 5,580 Baht
      - PMT = 450, I = 6%, n = 10 → PVA = 3,312 Baht
      - Bonds issue price = 5,580 + 3,312 = 8,892 Baht
    - PV Table:

Present value of a single payment at the end of 10 periods at 6%: (10,000 x 0.558)	5,580.00
Present value of 10 periodic payments at 6%: (450 x 7.360)	3,312.00
Present value of 10,000 Baht bond	**8,892.00**

  - The market rate has increased so much since the bond was issued – from 9 percent to 12 percent – that the value of the bond today is only 8,892 Baht. That amount is all investors would be willing to pay at this time for a bond that provides income of 450 Baht every six months and a return of the 10,000 Baht par value in five years.

Using Present Value to Value a Bond -- Illustration

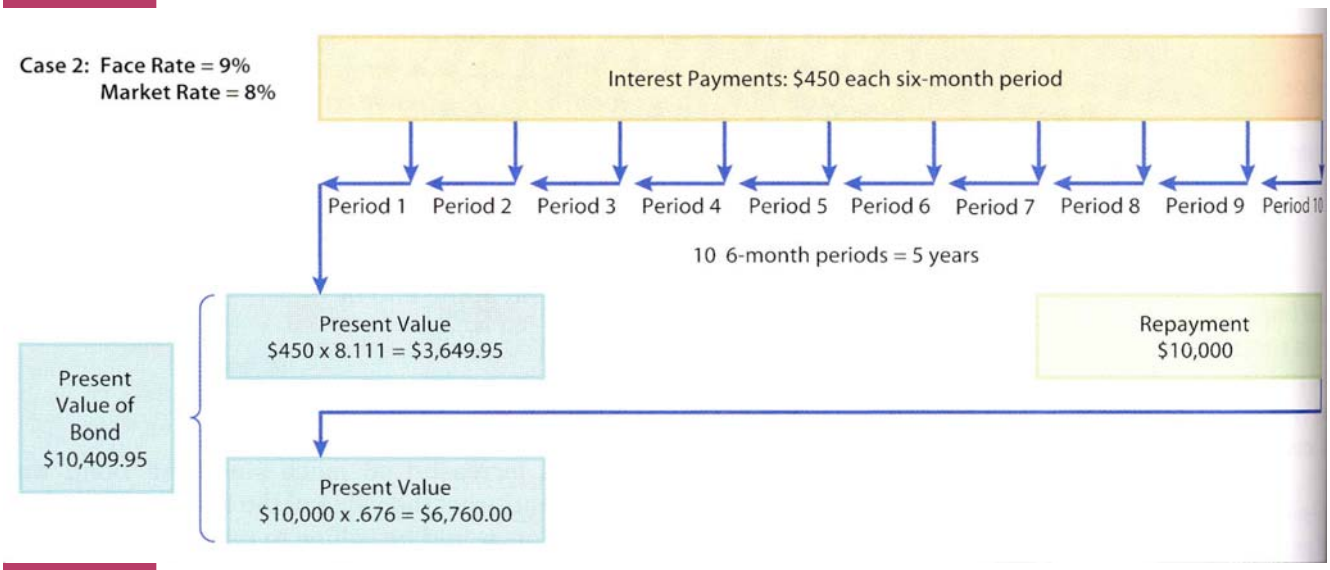


Case 2: Market Rate Below Stated Rate

- **Example:**
  - Suppose a bond has a par value of 10,000 Baht and pays fixed interest of 450 Baht every six months (a 9 percent annual rate). The bonds is due in five years. If the market interest rate today is 8 percent, what is the present value of the bond?
    - Financial calculator:
      - FV = 10,000, I = 4%, n = 10 → PV = 6,760.00 Baht
      - PMT = 450, I = 4%, n = 10 → PVA = 3,649.95 Baht
      - Bonds issue price = 6,760.00 + 3,649.95 = 10,409.95 Baht
    - PV Table:

Present value of a single payment at the end of 10 periods at 4%: (10,000 x 0.676)	6,760.00
Present value of 10 periodic payments at 4%: (450 x 8.111)	3,649.95
Present value of 10,000 Baht bond	**10,409.95**

Using Present Value to Value a Bond -- Illustration



Amortization of Bond Discounts and Premiums

- **A bond discount or premium represents the amount by which the total interest cost is higher or lower than the total interest payments.**
  - To record interest expense properly and ensure that the carrying amount of the bonds payable a maturity equals par value, it is necessary to systematically reduce the bond discount or premium – that is, to amortize them – over the life of the bonds. This is accomplished by using either the straight-line method or the effective interest method.

Amortizing a Bond Discount

- **Example:**

Par

  - Recall that the Company issued 100,000 Baht of five-year bonds at a time when the market interest rate of 10 percent exceeded the stated interest rate f 9 percent. The bonds sold for 96,149 Baht, resulting in an unamortized bond discount of 3,851 Baht.
  - Because a bond discount affects interest expense in each year of a bond issue, the bond discount should be amortized over the life of the bond issue.
    - In this way, the unamortized bond discount will decrease gradually over time, and the carrying amount of the bond issue (par value less unamortized discount) will gradually increase. By the maturity date, the carrying amount of the bond issue will equal its par value, and the unamortized bond discount will be zero.

Amortizing a Bond Discount – Straight-line Method

- **Straight-line method:**
  - The ***straight-line method*** equalizes amortization of bond discount for each interest period.
    - The interest payment dates of the bond issue are January 1 and July 1 of each year, and the bonds mature in five years.
    - With the straight-line method, the amount of the bond discount amortized and the interest expense for each semiannual period are calculated in four steps:
      - 1. Total interest payment periods
        = Interest payments per year x Life of bonds
        = 2 x 5 = 10 periods
      - 2. Amortization of bond discount per interest period
        = Bond discount ÷ Total interest payments
        = 3,851 / 10 = 385.10 Baht
      - 3. Cash interest payment
        = Par value x Stated interest rate x Time
        = 100,000 x 9% x 6/12 = 4,500.00 Baht
      - 4. Interest expense per interest period
        = Interest payment + Amortization of bond discount
        = 4,500.00 + 385.10 = 4,885.10 Baht

Amortizing a Bond Discount – Straight-line Method (Cont.)

- On July 1, 20X6, the first semiannual interest date, the entry would be as follows:

Date	General Journal	Debit	Credit
July 1, 20X6	Dr. Interest expense [Exp+, E-]	4,885	
	Cr. Cash [A-]		4,500
	Bonds discount [Contra L-, L+]		385
	Paid semiannual interest to bondholders of 9%, 5-year bonds		
	and amortized the bond discount		

Amortizing a Bond Discount – Effective Interest Method

- **Effective interest method:**
  - When the ***effective interest method*** is used to compute the interest and amortization of a bond discount, a constant interest rate is applied to the carrying amount of the bonds at the beginning of each interest period. This constant rate is the market rate (i.e., the effective rate) at the time the bonds were issued. The amount amortized each period is the difference between the interest computed by using the market rate and the actual interest paid to bondholders.
    - Using the same set of facts stated earlier, the amortization table is presented below.

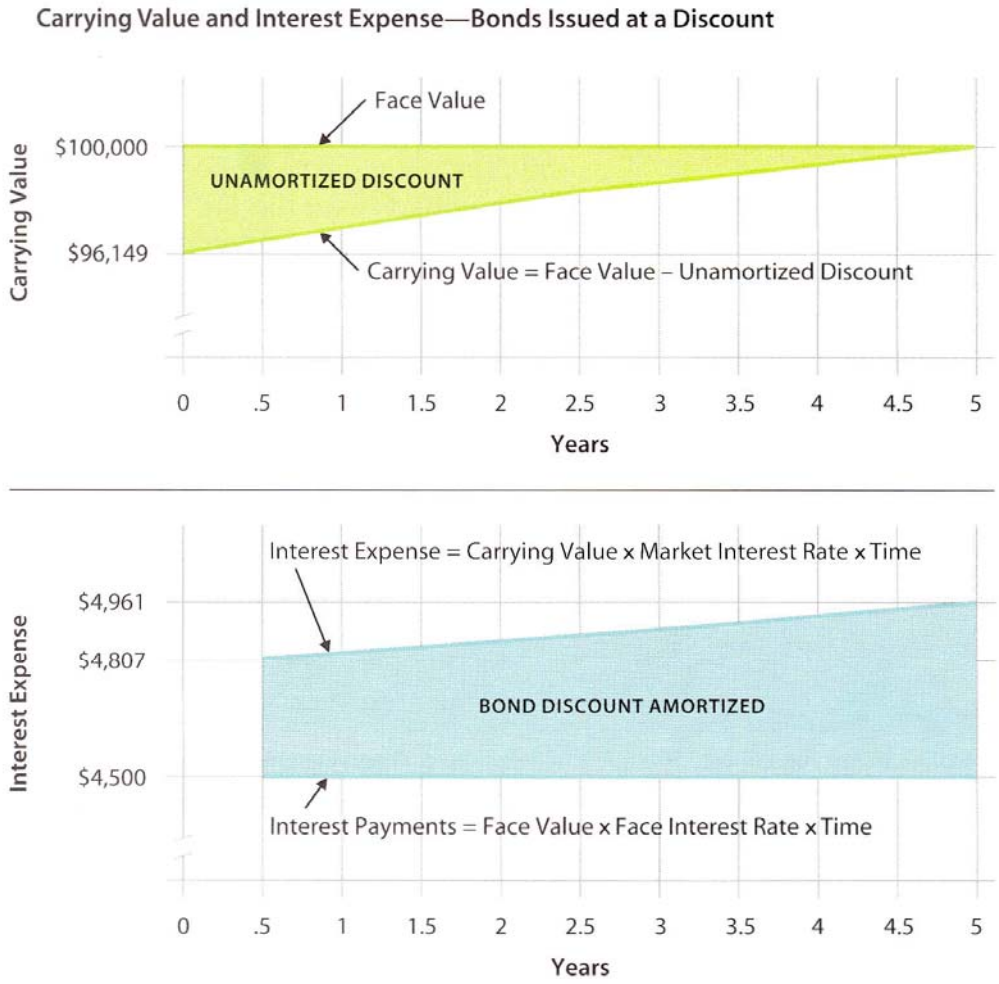
Amortizing a Bond Discount – Effective Interest Method (Cont.)

	A	B	C	D	E	F
Semiannual Interest Period	Carrying Amount at Beginning of Period	Semiannual Interest Expense at 10% to Be Recorded (5% x A)	Semiannual Cash Interest Payment to Bondholders (4.5% x 100,000)	Amortization of Bond Discount (B-C)	Unamortized Bond Discount at End of Period (E-D)	Carrying Amount at End of Period (A+D)
0					3,851.00	96,149.00
1	96,149.00	4,807.45	4,500.00	307.45	3,543.55	96,456.45
2	96,456.45	4,822.82	4,500.00	322.82	3,220.73	96,779.27
3	96,779.27	4,838.96	4,500.00	338.96	2,881.76	97,118.24
4	97,118.24	4,855.91	4,500.00	355.91	2,525.85	97,474.15
5	97,474.15	4,873.71	4,500.00	373.71	2,152.14	97,847.86
6	97,847.86	4,892.39	4,500.00	392.39	1,759.75	98,240.25
7	98,240.25	4,912.01	4,500.00	412.01	1,347.74	98,652.26
8	98,652.26	4,932.61	4,500.00	432.61	915.13	99,084.87
9	99,084.87	4,954.24	4,500.00	454.24	460.88	99,539.12
10	99,539.12	4,960.88	4,500.00	460.88	- 0.00	100,000.00

Amortizing a Bond Discount – Effective Interest Method (Cont.)

- The entry to record the interest expense is exactly like the one when the straight-line method is used. However, the amounts debited and credited to the various accounts are different. Using the effective interest method, the entry for July 1, 20X6, would be as follows:

Date	General Journal	Debit	Credit
July 1, 20X6	Dr. Interest expense [Exp+, E-]	4,807	
	Cr. Cash [A-]		4,500
	Bonds discount [Contra L-, L+]		307
	Paid semiannual interest to bondholders of 9%, 5-year bonds		
	and amortized the bond discount		



Amortizing a Bond Premium

- **Example:**
  - The company issued 100,000 Baht of five-year bonds at a time when the market interest rate was 8 percent and the stated interest rate is 9 percent. The bonds sold for 104,100 Baht, which resulted in an unamortized bond premium of 4,100 Baht. Like a discount, a premium must be amortized over the life of the bonds so that it can be matched to its effects on interest expense during that period.

Amortizing a Bond Premium – Straight-line method (Cont.)

- **Straight-line method:**
  - Under the ***straight-line method***, the bond premium is spread evenly over the life of the bond issue.
    - As with bond discounts, the amount of bond premium amortized and interest expense for each semiannual period are computed in four steps:
      - 1. Total interest payment periods
        = Interest payment per year x Life of bonds
        = 2 x 5 = 10 periods
      - 2. Amortization of bond premium per interest payment period
        = Bond premium ÷ Total interest payment periods
        = 4,100 / 10 = 410 Baht
      - 3. Cash interest payment
        = Principal x Stated interest rate x Time
        = 100,000 x 9% x 6/12 = 4,500 Baht
      - 4. Interest expense per interest payment period
        = Interest expense – Amortization of bond premium
        = 4,500 – 410 = 4,090 Baht

Amortizing a Bond Premium – Straight-line method (Cont.)

- On July 1, 20X6, the first semiannual interest date, the entry would be like this:

Date	General Journal	Debit	Credit
July 1, 20X6	Dr. Interest expense [Exp+, E-]	4,090	
	Bonds premium [Adjunct L-, L-]	410	
	Cr. Cash [A-]		4,500
	Paid semiannual interest to bondholders of 9%, 5-year bonds		
	and amortized the bond premium		

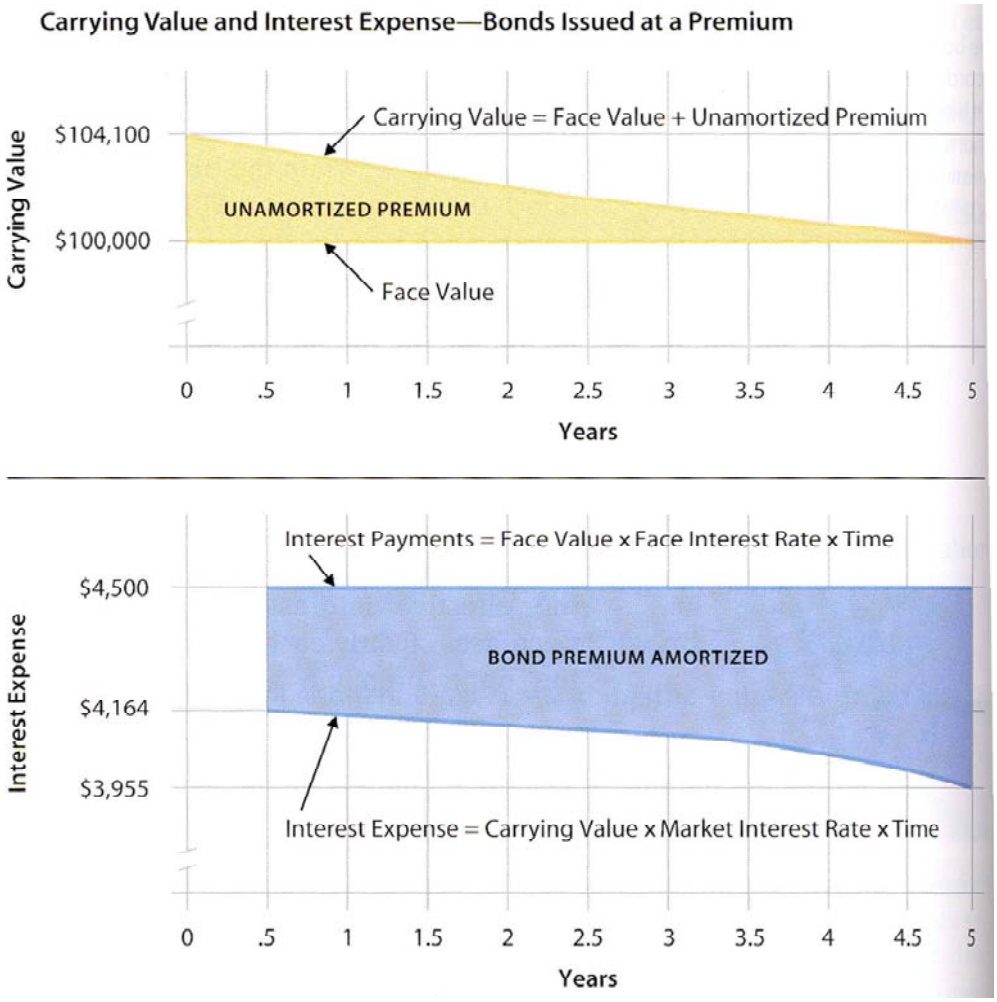
Amortizing a Bond Premium – Effective Interest Method (Cont.)

	A	B	C	D	E	F
Semiannual Interest Period	Carrying Amount at Beginning of Period	Semiannual Interest Expense at 8% to Be Recorded (4% x A)	Semiannual Cash Interest Payment to Bondholders (4.5% x 100,000)	Amortization of Bond Premium (C-B)	Unamortized Bond Premium at End of Period (E-D)	Carrying Amount at End of Period (A-D)
0					4,100.00	104,100.00
1	104,100.00	4,164.00	4,500.00	336.00	3,764.00	103,764.00
2	103,764.00	4,150.56	4,500.00	349.44	3,414.56	103,414.56
3	103,414.56	4,136.58	4,500.00	363.42	3,051.14	103,051.14
4	103,051.14	4,122.05	4,500.00	377.95	2,673.19	102,673.19
5	102,673.19	4,106.93	4,500.00	393.07	2,280.12	102,280.12
6	102,280.12	4,091.20	4,500.00	408.80	1,871.32	101,871.32
7	101,871.32	4,074.85	4,500.00	425.15	1,446.17	101,446.17
8	101,446.17	4,057.85	4,500.00	442.15	1,004.02	101,004.02
9	101,004.02	4,040.16	4,500.00	459.84	544.18	100,544.18
10	100,544.18	3,955.82	4,500.00	544.18	0.00	100,000.00

Amortizing a Bond Premium – Effective Interest Method

- **Effective interest method:**
  - With this method, the interest expense decreases slightly each period because the amount of the bond premium amortized increases slightly. This occurs because a fixed rate is applied each period to the gradually decreasing carrying amount. The first interest payment is recorded as follows:

Date	General Journal	Debit	Credit
July 1, 20X6	Dr. Interest expense [Exp+, E-]	4,164	
	Bonds premium [Adjunct L-, L-]	336	
	Cr. Cash [A-]		4,500
	Paid semiannual interest to bondholders of 9%, 5-year bonds		
	and amortized the bond premium		



Financial Ratios Related to Debt Financing

- **Debt ratio:**
  - A measure of leverage, computed by dividing total liabilities by total assets.
    - Debt ratio = Total liabilities ÷ Total assets
- **Debt-to-equity ratio:**
  - The ratio that measures the balance between debt and equity. Debt funds are viewed as being riskier than equity funds. The ratio is computed as total liabilities divided by total equity.
    - Debt-to-equity ratio = Total liabilities ÷ Total shareholders' equity
- **Times interest earned ratio:**
  - The ratio that measure a company's ability to generate resources from current operations to meet its interest obligations. The ratio is computed as follows:
    - Times interest earned ratio = Earnings before interest and taxes ÷ Interest expense

STATEMENTS OF FINANCIAL POSITION (CONTINUED)

PRESIDENT BAKERY PUBLIC COMPANY LIMITED
As at 31 December 2011 and 2010

Example of Financial Statement Presentation & Disclosure: Liabilities
[Source: www.farmhouse.co.th]

(Unit: Baht)

	NOTE	SEPARATE FINANCIAL STATEMENTS 2011	2010
Liabilities and shareholders' equity			
Current liabilities			
Bank overdrafts	17	78	-
Trade and other payables	11, 18	608,881,454	591,665,451
Current portion of liabilities under finance lease agreements	11, 19	68,260,107	52,180,486
Corporate income tax payable		67,060,015	68,351,203
Accrued expenses		152,668,527	125,345,711
Other current liabilities		20,386,721	16,828,265
Total current liabilities		917,256,902	854,371,116

STATEMENTS OF FINANCIAL POSITION (CONTINUED)

PRESIDENT BAKERY PUBLIC COMPANY LIMITED
As at 31 December 2011 and 2010

(Unit: Baht)

	NOTE	SEPARATE FINANCIAL STATEMENTS 2011	2010
Non-current liabilities			
Liabilities under finance lease agreements - net of current portion	11, 19	83,586,175	77,410,516
Long-term loans from directors	11, 20	79,646,619	72,795,970
Long-term loans from employees	20	43,583,378	47,836,707
Provision for long-term employee benefits	21	33,976,079	-
Other non-current liabilities		876,201	535,907
Total non-current liabilities		241,668,452	198,579,100
Total liabilities		1,158,925,354	1,052,950,216

17. BANK OVERDRAFTS

The Company has overdraft facilities of Baht 44 million, which bear interest at a rate of MOR percent per annum.

18. TRADE AND OTHER PAYABLES

(Unit: Thousand Baht)

	2011	2010
Trade payables - related parties	220,319	159,114
Trade payables - unrelated parties	297,896	257,281
Other payables - related party	700	66
Other payables for purchase of machineries	10,331	82,265
Other payables for miscellaneous expenses	79,635	92,939
Total trade and other payables	608,881	591,665

The Siam Cement Public Company Limited and its Subsidiaries

Consolidated balance sheets

As at 31 December 2010 and 2009

in thousand Baht

Liabilities and shareholders' equity	Note	2010	2009
Non-current liabilities			
Provident funds	25	421,162	415,503
Long-term debts	16	27,643,146	35,695,519
Debentures	17	84,853,756	94,749,874
Deferred tax liabilities	13	2,623,343	387,726
Other non-current liabilities	18	1,024,712	1,079,180
Total non-current liabilities		**116,566,119**	**132,327,802**
Total liabilities		**199,648,611**	**184,570,416**

Example of Financial Statement Presentation & Disclosure: Bonds (Debentures)

[Source: www.scg.co.th]

16 Long-term debts

	in million Baht	
	2010	2009
Current		
- Secured		
Current portion of long-term debts from financial institutions	-	162
- Unsecured		
Current portion of long-term debts	7,013	2,330
Current portion of finance lease liabilities	198	119
	7,211	**2,611**
Non-current		
- Unsecured		
Long-term debts	26,829	35,390
Finance lease liabilities	814	306
	27,643	**35,696**
Total	**34,854**	**38,307**

17 Debentures

As at 31 December 2010, the Company had issued unsubordinated and unsecured debentures and the subsidiary had issued subordinated and unsecured convertible debentures totalling Baht 110,944 million *(2009: Baht 110,929 million)* as follows:

	in million Baht		Interest Rate			Fair Value *	
Debentures No.	2010	2009	(% p.a.)	Term	Maturity Date	2010	2009
Debentures - The Siam Cement Public Company Limited							
3/2006	-	10,000	6.00	4 years	1 April 2010	-	1,009
4/2006	-	5,000	6.25	4 years	1 October 2010	-	1,038
1/2007	15,000	15,000	5.75	4 years	1 April 2011	1,020	1,049
2/2007	10,000	10,000	4.50	4 years	1 November 2011	1,024	1,041
1/2008	20,000	20,000	4.25	4 years	1 April 2012	1,031	1,044
2/2008	20,000	20,000	5.35	4 years	1 November 2012	1,046	1,059
1/2009	20,000	20,000	5.15	4 years	1 April 2013	1,044	1,059
2/2009	10,000	10,000	4.15	4 years	1 October 2013	1,031	1,025
1/2010	10,000	-	3.85	4 years	1 April 2014	1,032	-
2/2010	5,000	-	3.85	4 years	1 October 2014	1,037	-
Total	110,000	110,000					

Convertible Debentures – Thai-German Ceramic Industry Public Company Limited **							
1/2008	944	929	1st – 2nd year MLR minus 3.50 3rd – 5th year MLR minus 3.00	5 years	1 August 2013	911	922
Total	110,944	110,929					
Less: Debentures held by subsidiaries	1,212	1,219					
Net	**109,732**	**109,710**					
Less: Current portion	24,878	14,960					
Net	**84,854**	**94,750**					

* Latest price (Baht per unit: 1 unit = Baht 1,000) as at 31 December 2010 and 2009.

** Debenture holders have the option to convert the debentures into TGCI shares at the rate of Baht 1.45 per 1 share of TGCI, subject to the adjustment of which is specified in the agreement. The holders can exercise the option after 2 years from the issuance date of the debentures.

BONDS PAYABLE

PAR	**1,000,000**	**LIFE**	**5 YEARS**
STATED RATE	**10%**	**ISSUANCE DATE**	**01-01-X1**
INTEREST PAYMENT PERIOD	**SEMIANNUALLY**	**MATURITY DATE**	**31-12-X5**

Issuance date	Bond life 5 Years	Maturity date
01-01-X1		31-12-X5

n = 10 periods

PV = PRICE											**Cash interest payment [PAR x STATED I x TIME]**
	50,000	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**[1,000,000 x 10% x 6/12]**
										1,000,000	**Principal payment**

Case #1 Bond issued at par

PRICE	**=**	**PAR**	**|**	**MARKET RATE [10%]**	**=**	**STATED RATE [10%]**

Case #2 Bond issued at discount

PRICE	**<**	**PAR**	**|**	**MARKET RATE [12%]**	**>**	**STATED RATE [10%]**

Case #3 Bond issued at premium

PRICE	**>**	**PAR**	**|**	**MARKET RATE [8%]**	**<**	**STATED RATE [10%]**

i

Bond Price Calculation

BOND #1

PAR	**1,000,000**					
STATED RATE	**10%**	**PER YEAR**				
INTEREST PAYMENT PERIODS	**SEMIANNUALLY**					
LIFE	**5**	**YEARS**				
MARKET RATE	**10%**	**PER YEAR**				
Calculation using PV Tables:						
(1) Present value of Principal			**x**		**=**	
(2) Present value of Interest			**x**		**=**	
PRICE						

PRICE		
	N	
	I/Y	
	PV	
	PMT	
	FV	

BOND #2

PAR	**1,000,000**					
STATED RATE	**10%**	**PER YEAR**				
INTEREST PAYMENT PERIODS	**SEMIANNUALLY**					
LIFE	**5**	**YEARS**				
MARKET RATE	**12%**	**PER YEAR**				
Calculation using PV Tables:						
(1) Present value of Principal			**x**		**=**	
(2) Present value of Interest			**x**		**=**	
PRICE						

PRICE		
	N	
	I/Y	
	PV	
	PMT	
	FV	

BOND #3

PAR	**1,000,000**					
STATED RATE	**10%**	**PER YEAR**				
INTEREST PAYMENT PERIODS	**SEMIANNUALLY**					
LIFE	**5**	**YEARS**				
MARKET RATE	**8%**	**PER YEAR**				
Calculation using PV Tables:						
(1) Present value of Principal			**x**		**=**	
(2) Present value of Interest			**x**		**=**	
PRICE						

PRICE		
	N	
	I/Y	
	PV	
	PMT	
	FV	

BOND #4						
PAR	**5,000,000**					
STATED RATE	**8%**	**PER YEAR**				
INTEREST PAYMENT PERIODS	**QUARTERLY**					
LIFE	**3**	**YEARS**				
MARKET RATE	**6%**	**PER YEAR**				
Calculation using PV Tables:						
(1) Present value of Principal				**x**		**=**
(2) Present value of Interest				**x**		**=**
PRICE						
PRICE						

	N	
	I/Y	
	PV	
	PMT	
	FV	

BOND #5						
PAR	**1,000,000**					
STATED RATE	**10%**	**PER YEAR**				
INTEREST PAYMENT PERIODS	**ANNUALLY**					
LIFE	**5**	**YEARS**				
MARKET RATE	**12%**	**PER YEAR**				
Calculation using PV Tables:						
(1) Present value of Principal				**x**		**=**
(2) Present value of Interest				**x**		**=**
PRICE						
PRICE						

	N	
	I/Y	
	PV	
	PMT	
	FV	

BOND #6						
PAR	**2,000,000**					
STATED RATE	**15%**	**PER YEAR**				
INTEREST PAYMENT PERIODS	**MONTHLY**					
LIFE	**1**	**YEAR**				
MARKET RATE	**12%**	**PER YEAR**				
Calculation using PV Tables:						
(1) Present value of Principal				**x**		**=**
(2) Present value of Interest				**x**		**=**
PRICE						
PRICE						

	N	
	I/Y	
	PV	
	PMT	
	FV	

Bonds payable

Bond information

1. Par value, Principal, or Face value	1,000,000	Baht
2. Stated interest rate, Coupon rate, or Contract rate	10%	per year
3. Interest payment periods [Annually, Semiannually, Quarterly, Monthly]	Semiannually (June 30 and December 31)	
4. Bonds term or Life Issuance date: January 1, 20X1 Maturity date: December 31, 20X5	5	years

Future cash flows related to bonds payable

1. Principal payment (December 31 20X5)	1,000,000	Baht
	50,000	Baht per period

Cash interest payment per period
= Par x Stated i x Time

Bond price

Case #1 Bond issued at PAR

Market interest rate, Yield, or Effective interest rate	10%	per year
a. Present value of par value		
Par _____		
x PV factor [Table 2]		
(n=_____,i=_____%) _____		
b. Present value of interest	+	
Interest _____		
x PVA factor [Table 4]		
(n=_____,i=_____%) _____		
= Bond price		

Journal entry to record bond issuance

Date	General Journal	Debit	Credit
Jan. 1, 20X1			

Journal entry to record the first interest payment

Date	General Journal	Debit	Credit
Jun. 30, 20X1			

n = 10 periods …

Journal entry to record the principal payment

Date	General Journal	Debit	Credit
Dec. 31, 20X5			

Case #2 Bond issued at DISCOUNT

Market interest rate, Yield, or Effective interest rate	12% per year	
a. Present value of par value		
Par _____		
x PV factor [Table 2]		
(n=_____,i=_____%) _____		
b. Present value of interest	+	
Interest _____		
x PVA factor [Table 4]		
(n=_____,i=_____%) _____		
= Bond price		

Journal entry to record bond issuance

Date	General Journal	Debit	Credit
Jan. 1, 20X1			

Journal entry to record the first interest payment

Date	General Journal	Debit	Credit
Jun. 30, 20X1			

n = 10 periods …

Journal entry to record the principal payment

Date	General Journal	Debit	Credit
Dec. 31, 20X5			

Bonds Discount Amortization under the Straight-line method

BONDS DISCOUNT [Contra L]

01-01-X1	30-06-X1
	31-12-X1
	30-06-X2
	31-12-X2
	30-06-X3
	31-12-X3
	30-06-X4
	31-12-X4
	30-06-X5
	31-12-X5
31-12-X5	

	01-01-X1	…	31-12-X5
Bonds payable, at par			
Less: Bonds discount			
Bonds payable, net			

*Interest expense[@STL method]

= Cash interest payment + Discount amortization

Bonds Discount Amortization under the Effective Interest Method

Interest Payment Period	Carrying Amount of Bonds Payable at the Beginning of the period	Effective Interest Expense = BV x MKTi x Time	Cash Interest Payment = Par x STATEDi x Time	Discount Amortization	Unamortized Discount	Carrying Amount of Bonds Payable at the End of the period
0: 01-01-X1						
1: 30-06-X1						
2: 31-12-X1						
3: 30-06-X2						
4: 31-12-X2						
5: 30-06-X3						
6: 31-12-X3						
7: 30-06-X4						
8: 31-12-X4						
9: 30-06-X5						
10: 31-12-X5						

Case #3 Bond issued at PREMIUM

Market interest rate, Yield, or Effective interest rate — 8% per year

a. Present value of par value

Par _____

x PV factor [Table 2]

(n=_____,i=_____%) _____

b. Present value of interest — +

Interest _____

x PVA factor [Table 4]

(n=_____,i=_____%) _____

= Bond price

Journal entry to record bond issuance

Date	General Journal	Debit	Credit
Jan. 1, 20X1			

Journal entry to record the first interest payment

Date	General Journal	Debit	Credit
Jun. 30, 20X1			

n = 10 periods …

Journal entry to record the principal payment

Date	General Journal	Debit	Credit
Dec. 31, 20X5			

Bonds Premium Amortization under the Straight-line Method

BONDS PREMIUM [Adjunct L]

30-06-X1	01-01-X1
31-12-X1	
30-06-X2	
31-12-X2	
30-06-X3	
31-12-X3	
30-06-X4	
31-12-X4	
30-06-X5	
31-12-X5	
	31-12-X5

	01-01-X1 …	31-12-X5
Bonds payable, at par		
Add: Bonds premium		
Bonds payable, net		

Interest expense[@STL method]

= Cash interest payment - Premium amortization

Bonds Premium Amortization under the Effective Interest Method

Interest Payment Period	Carrying Amount of Bonds Payable at the Beginning of	Effective Interest Expense = BV x MKTi x Time	Cash Interest Payment = Par x STATEDi x Time	Premium Amortization	Unamortized Premium	Carrying Amount of Bonds Payable at the End of the period
0: 01-01-X1						
1: 30-06-X1						
2: 31-12-X1						
3: 30-06-X2						
4: 31-12-X2						
5: 30-06-X3						
6: 31-12-X3						
7: 30-06-X4						
8: 31-12-X4						
9: 30-06-X5						
10: 31-12-X5						

EXERCISES

Available with McGraw-Hill's Homework Manager

E10-1 Bond Terminology: Fill in the Missing Blanks

LO1

1. The _____ is the amount (a) payable at the maturity of the bond and (b) on which the periodic cash interest payments are computed.
2. _____ is another name for bond principal, or the maturity amount of a bond.
3. _____ is another name for principal, or the principal amount of the bond.
4. The _____ is the rate of cash interest per period stated in the bond contract.
5. A _____ is an unsecured bond; no assets are specifically pledged to guarantee repayment.
6. _____ bonds may be called for early retirement at the option of the issuer.
7. _____ bonds may be converted to other securities of the issuer (usually common stock).

Interpreting Information Reported in the Business Press

E10-2
LO1
AT&T

As this book was being written, the business press reported the following information concerning bonds issued by AT&T:

Bonds	Yield	Close
AT&T 6.5	7.3	89.5

Explain the meaning of the reported information. If you bought AT&T bonds with $10,000 face value, how much would you pay (based on the preceding information reported)? Assume that the bonds were originally sold at par. What impact would the decline in value have on the financial statements for AT&T?

Analyzing a Conversion Feature

E10-3
LO2

Wynn Resorts

Wynn Resorts owns a variety of popular gaming resorts. Their annual report contained the following information:

Debenture Conversions

Our convertible debentures are currently convertible at each holder's option into shares of the Company's common stock at a conversion price of $23.00 per share (equivalent to 43.4782 shares per $1,000 principal amount). During the fourth quarter of 2006, we issued 1,434 shares of common stock upon the conversion of $33,000 of convertible debentures.

The current selling price for Wynn stock is $90. Explain why some bondholders have not converted the bonds to common stock, given that they can do so at $23 per share.

Computing Issue Prices of Bonds for Three Cases

E10-4
LO2,3,4

Thompson Corporation is planning to issue $100,000, seven-year, 8 percent bonds. Interest is payable each December 31. All of the bonds will be sold on January 1, 2009.

Required:
Compute the issue (sale) price on January 1, 2009, for each of the following independent cases (show computations):

a. **Case A:** Market (yield) rate, 8 percent.
b. **Case B:** Market (yield) rate, 6 percent.
c. **Case C:** Market (yield) rate, 10 percent.

Computing Issue Prices of Bonds for Three Cases

E10-5
LO2,3,4

Oxxford Corporation is planning to issue $500,000 worth of bonds that mature in 10 years and pay 6 percent interest each June 30 and December 31. All of the bonds will be sold on January 1, 2009.

Required:
Compute the issue (sale) price on January 1, 2009, for each of the following independent cases (show computations):

a. **Case A:** Market (yield) rate, 4 percent.
b. **Case B:** Market (yield) rate, 6 percent.
c. **Case C:** Market (yield) rate, 8 percent.

Analyzing Financial Ratios

E10-6
LO2,5


You have just started your first job as a financial analyst for a large stock brokerage company. Your boss, a senior analyst, has finished a detailed report evaluating bonds issued by two different companies. She stopped by your desk and asked for help: "I have compared two ratios for the companies and found something interesting." She went on to explain that the debt-to-equity ratio for Applied Technologies, Inc., is much lower than the industry average and that the one for Innovative Solutions, Inc., is much higher. On the other hand, the times interest earned ratio for Applied Technologies is much higher than the industry average, and the ratio for Innovative Solutions is much lower. Your boss then asked you to think about what the ratios indicate about the two companies so that she could include the explanation in her report. How would you respond to your boss?

E10-7 Computing the Issue Price of a Bond
LO3

Wilson Corporation issued a $100,000 bond that matures in five years. The bond has a stated interest rate of 6 percent. On January 1, 2009, when the bond was issued, the market rate was 8 percent. The bond pays interest twice per year, on June 30 and December 31. At what price was the bond issued?

E10-8 Recording Bond Issue and First Interest Payment with Discount (Straight-Line Amortization)

On January 1, 2009, Seton Corporation sold a $750,000, 8 percent bond issue (9 percent market rate). The bonds were dated January 1, 2009, pay interest each December 31, and mature in 10 years.

Required:

1. Give the journal entry to record the issuance of the bonds.
2. Give the journal entry to record the interest payment on December 31, 2009. Use straight-line amortization.
3. Show how the interest expense and the bonds payable should be reported on the December 31, 2009, annual financial statements.

E10-9 Recording Bond Issue and First Interest Payment with Discount (Effective-Interest Amortization)
LO3

On January 1, 2009, Hyde Corporation sold a $600,000, 7.5 percent bond issue (8.5 percent market rate). The bonds were dated January 1, 2009, pay interest each June 30 and December 31, and mature in four years.

Required:

1. Give the journal entry to record the issuance of the bonds.
2. Give the journal entry to record the interest payment on December 31, 2009. Use effective-interest amortization.
3. Show how the bond interest expense and the bonds payable should be reported on the June 30, 2009, income statement and balance sheet.

E10-10 Recording Bond Issue: Entries for Issuance and Interest (Straight-Line Amortization)
LO3

Northland Corporation had $300,000, 10-year bonds outstanding on December 31, 2009 (end of the accounting period). Interest is payable each December 31. The bonds were issued on January 1, 2009. The company uses the straight-line method to amortize any premium or discount. The December 31, 2009 annual financial statements showed the following:

Income statement	
Bond interest expense	$ 23,100
Balance sheet	
Bonds payable (net liability)	281,100

Required (show computations):

1. What was the issue price of the bonds? Give the journal entry to record the issuance of the bonds.
2. Give the entry to record 2009 interest.

E10-11 Analyzing a Bond Amortization Schedule: Reporting Bonds Payable
LO3

Stein Corporation sold a $1,000 bond on January 1, 2009. The bond specified an interest rate of 6 percent payable at the end of each year. The bond matures at the end of 2011. It was sold at a market rate of 8 percent per year. The following spreadsheet was completed:

	Cash Paid	Interest Expense	Amortization	Balance
January 1, 2009				$ 948
End of year 2009	$60	$76	$16	964
End of year 2010	60	77	17	981
End of year 2011	60	79	19	1,000

Required:

1. What was the bond's issue price?
2. Did the bond sell at a discount or a premium? How much was the premium or discount?
3. What amount of cash was paid each year for bond interest?
4. What amount of interest expense should be shown each year on the income statement?
5. What amount(s) should be shown on the balance sheet for bonds payable at each year-end? (For year 2011, show the balance just before retirement of the bond.)
6. What method of amortization was used?
7. Show how the following amounts were computed for year 2010: (a) $60, (b) $77, (c) $17, and (d) $981.
8. Is the method of amortization that was used preferable? Explain why.

Explaining Why Debt Is Sold at a Discount

E10-12
LO3
American Airlines

The annual report of American Airlines contained the following note:

The Company recorded the issuance of $775 million in bonds (net of $25 million discount) as long-term debt on the consolidated balance sheet. The bonds bear interest at fixed rates, with an average effective rate of 8.06 percent, and mature over various periods of time, with a final maturity in 2031.

After reading this note, an investor asked her financial advisor why the company didn't simply sell the notes for an effective yield of more than 8.06 percent and avoid having to account for a small discount over the next 20 years. Prepare a written response to this question.

Explaining Bond Features

E10-13
LO3
Disney

The annual report for Disney Company contained the following note:

The Company has outstanding $1.3 billion of convertible senior notes due on April 15, 2023. The notes bear interest at a fixed annual rate of 2.13 percent. The notes are convertible into common stock, under certain circumstances, at a conversion rate of 33.9443 shares of common stock per $1,000 principal amount of notes. This is equivalent to a conversion price of $29.46.

When the notes were issued, interest rates were much higher than the 2.13 percent offered by Disney. Why would an investor accept such a low interest rate?

Evaluating Bond Features

E10-14
LO3

You are a personal financial planner working with a married couple in their early 40s who have decided to invest $100,000 in corporate bonds. You have found two bonds that you think will interest your clients. One is a zero coupon bond issued by PepsiCo with an effective interest rate of 9 percent and a maturity date of 2018. It is callable at par. The other is a Walt Disney bond that matures in 2093. It has an effective interest rate of 9.5 percent and is callable at 105 percent of par. Which bond would you recommend and why? Would your answer be different if you expected interest rates to fall significantly over the next few years? Would you prefer a different bond if the couple were in their late 60s and retired?

Recording Bond Issue and First Interest Payment with Premium (Straight-Line Amortization)

E10-15
LO4

On January 1, 2009, Bochini Corporation sold a $1,400,000, 8 percent bond issue (6 percent market rate). The bonds were dated January 1, 2009, pay interest each June 30 and December 31, and mature in four years.

Required:

1. Give the journal entry to record the issuance of the bonds.
2. Give the journal entry to record the interest payment on June 30, 2009. Use straight-line amortization.
3. Show how the bond interest expense and the bonds payable should be reported on the June 30, 2009 balance sheet and income statement.

E10-16 **LO4** **Recording Bond Issue and First Interest Payment with Premium (Effective-Interest Amortization)**

On January 1, 2009, Frog Corporation sold a $2,000,000, 10 percent bond issue (8.5 percent market rate). The bonds were dated January 1, 2009, pay interest each June 30 and December 31, and mature in 10 years.

Required:

1. Give the journal entry to record the issuance of the bonds.
2. Give the journal entry to record the interest payment on June 30, 2009. Use effective-interest amortization.
3. Show how the bond interest expense and the bonds payable should be reported on the June 30, 2009, financial statements.

E10-17 **LO4** **Preparing a Debt Payment Schedule with Effective-Interest Method of Amortization and Determining Reported Amounts**

Shuttle Company issued a $10,000, three-year, 5 percent bond on January 1, 2009. The bond interest is paid each December 31. The bond was sold to yield 4 percent.

Required:

1. Complete a bond payment schedule. Use the effective-interest method.
2. What amounts will be reported on the income statement and balance sheet at the end of 2009, 2010, and 2011?

E10-18 **LO4** **Determining Financial Statement Effects for Bond Issue and First Interest Payment with Premium (Straight-Line Amortization)**

Grocery Corporation sold a $300,000, 6 percent bond issue on January 1, 2009, at a market rate of 3 percent. The bonds were dated January 1, 2009, with interest to be paid each December 31; they mature in 10 years. The company uses the straight-line method to amortize any discount or premium).

Required:

1. How are the financial statements affected by the issuance of the bonds? Describe the impact on the debt-to-equity and times interest earned ratios, if any.
2. How are the financial statements affected by the payment of interest on December 31? Describe the impact on the debt-to-equity and times interest earned ratios, if any.
3. Show how the bond interest expense and the bonds payable should be reported on the December 31, 2009, annual financial statements.

E10-19 **LO4,7** **Computing the Issue Price of a Bond with Analysis of Income and Cash Flow Effects**

Imai Company issued a $1 million bond that matures in 10 years. The bond has a 10 percent stated rate of interest. When the bond was issued, the market rate was 8 percent. The bond pays interest each six months. Record the issuance of the bond on June 30. Notice that the company received more than $1 million when it issued the bond. How will this premium affect future income and future cash flows?

E10-20 **LO6** **Reporting the Early Retirement of a Bond**

Several years ago, Walters Company issued a $600,000 bond at par value. As a result of declining interest rates, the company has decided to call the bond at a call premium of 8 percent. Record the retirement of the bonds.

E10-21 **LO6** **Reporting the Early Retirement of a Bond with a Discount**

The Nair Company issued $500,000 in bonds at a discount five years ago. The current book value of the bonds is $475,000. The company now has excess cash on hand and plans to retire the bonds. The company must pay a 7 percent (of par) call premium to retire the bonds. Record the retirement of the bonds.

Determining Effects on the Statement of Cash Flows

E10-22
L07

A number of events over the life of a bond have effects that are reported on the statement of cash flows. For each of the following events, determine whether the event affects the statement of cash flows. If so, describe the impact and specify where on the statement the effect is reported.

Required:

1. A $1,000,000 bond is issued at a discount. The reported amount of the bond on the balance sheet is $960,000.
2. At year-end, $45,000 accrued interest is reported and $1,000 of the bond discount is amortized using the straight-line method.
3. Early in the second year, accrued interest is paid. At the same time, $9,000 interest that accrued in the second year is paid.
4. The company elects to retire the debt in the fifth year. At that time, the reported carrying value of the bonds is $960,000 and the company reports a $20,000 gain on the early retirement of debt.

EXERCISES
E10–1.

1. Bond principal, par value, or face value
2. Par value or face value
3. Face value or par value
4. Stated rate, coupon rate, or contract rate
5. Debenture
6. Callable bonds
7. Convertible bonds

E10–2.
The AT&T bonds have a coupon interest rate of 6.5%. If bonds with a $10,000 face value were purchased, the issue price would be $8,950 and they would provide a cash yield of 7.3%. A decline in value after issuance would have no impact on AT&T's financial statements.

E10–3.

When a bond offers a conversion feature, its value will be affected by the value of the common stock. As the price of the stock goes up, the bond becomes more valuable. In the case of the Wynn bond, each $1,000 face value bond can be converted into 43.4782 shares of stock. Given that the stock now sells for $90 per share, each bond is worth at least $3,913 based on this conversion feature. A bondholder who needs cash can simply sell the bond rather than converting it to stock and then selling the stock. In many cases, it is better to hold a company's bond than its stock. Such is the case with Wynn. The company's stock does not pay dividends but the bonds do pay periodic interest. Therefore, holders of bonds can participate in the appreciation of the stock while earning interest on their investment.

E10–4.

CASE A:		
$100,000 x 0.5835	$ 58,350	
$8,000 x 5.2064	41,651	
Issue price (market and stated rate same)	$100,001	(at par; $1 rounding error)
CASE B:		
$100,000 x 0.6651	$ 66,510	
$8,000 x 5.5824	44,659	
Issue price (market rate less than stated rate)	$111,169	(at a premium)
CASE C:		
$100,000 x 0.5132	$ 51,320	
$8,000 x 4.8684	38,947	
Issue price (market rate more than stated rate)	$ 90,267	(at a discount)

E10–5.

CASE A:		
$500,000 x 0.6730	$ 336,500	
$15,000 x 16.3514	245,271	
Issue price (market rate less than stated rate)	$581,771	(at a premium)
CASE B:		

$500,000 x 0.5537	$ 276,850	
$15,000 x 14.8775	223,163	
Issue price (market rate and stated rate same)	$500,013	(at par, $13 rounding error)

CASE C:

$500,000 x 0.4564	$ 228,200	
$15,000 x 13.5903	203,855	
Issue price (market rate more than stated rate)	$ 432,055	(at a discount)

E10–6.

Applied Technologies' ratios look better than Innovative Solutions' ratios. Applied Technologies has a lower debt-to-equity ratio than Innovative Solutions. This means that they have less debt in their capital structure, and therefore, are a less leveraged company and have less risk than Innovative Solutions. Applied Technologies' times-interest-earned ratio is higher than the ratio for Innovative Solutions. This also makes Applied Technologies a less risky company than Innovative Solutions because Applied Technologies generates a larger amount of income compared to its obligatory payments to creditors than Innovative Solutions.

E10–7.

Computations:

Interest:

$100,000 x 6% x 1/2	=	$3,000

Present value:

$100,000 x 0.6756	=	67,560
$ 3,000 x 8.1109	=	24,333
Issue price	=	$91,893

E10–8.

Computations:

Interest:

$750,000 x 8%	=	$ 60,000

Present value:

$750,000 x 0.4224	=	316,800
$ 60,000 x 6.4177	=	385,062
Issue price	=	$701,862

Req. 1

January 1:

Cash (+A)	701,862	
Discount on Bonds Payable (+XL, -L)	48,138	
Bonds Payable (+L)		750,000

Req. 2

December 31:

Bond Interest Expense (+E, -SE)	64,814	
Discount on Bonds Payable (-XL, +L)		4,814
Cash (-A)		60,000

Req. 3

December 31, 2009:		
Income statement:		
Bond interest expense	$ 64,814	
Balance sheet:		
Long-term Liabilities		
Bonds payable	$750,000	
Less: Unamortized discount ($48,138 - $4,814).....	43,324	$706,676

E10–9.

Computations:

Interest:

$600,000 x 7.5% x 1/2	=	$ 22,500

Present value:

$600,000 x 0.7168	=	430,080
$ 22,500 x 6.6638	=	149,936
Issue price	=	$580,016

Req. 1

January 1:

Cash (+A)	580,016	
Discount on Bonds Payable (+XL, -L)	19,984	
Bonds Payable (+L)		600,000

Req. 2

June 30:

Bond Interest Expense (+E, -SE) ($580,016 x 8.5% x 1/2)	24,651	
Discount on Bonds Payable (-XL, +L)		2,151
Cash (-A)		22,500

Req. 3

June 30, 2009:

Income statement:

Bond interest expense	$ 24,651	

Balance sheet:

Long-term Liabilities		
Bonds payable	$600,000	
Less: Unamortized discount ($19,984 – $2,151)	17,833	$582,167

E10–10.

Req. 1

Issue price:

1. Par, $300,000 – Carrying value at end of 1 year, $281,100 = $18,900 (unamortized discount for 9 remaining years).
2. $18,900 ÷ 9 years = $2,100 discount amortization per year (straight line).
3. $281,100 – $2,100 = $279,000 issue price (discount $21,000).

Issuance entry:

Cash (+A)	279,000	
Discount on bonds payable (+XL, -L)	21,000	
Bonds payable (+L)		300,000

Req. 2

Coupon (stated interest) rate:

1. Reported interest expense, $23,100 – Discount amortized, $2,100 = $21,000 (cash interest).
2. $21,000 ÷ $300,000 = 7% coupon (stated interest) rate.

Interest expense:

Interest expense (+E, -SE)	23,100	
Discount on bonds payable ($21,000 ÷ 10 years) (-XL, +L)		2,100
Cash ($300,000 x 7%) (-A)		21,000

E10–11.

1. Issue price: $948. Stated rate, 6%; effective or yield rate, 8% (both were given).
2. Discount: $1,000 – $948 = $52.
3. $1,000 x 6% = $60.
4. 2009, $76; 2010, $77; 2011, $79.
5. Balance sheet:

2009	$ 964	
2010	$ 981	
2011	$1,000	(immediately before retirement)

6. Effective-interest amortization was used.

E10–11. (continued)

7. (a) $1,000 x 6% = $60.
   (b) $964 x 8% = $77 (rounded).
   (c) $77 – $60 = $17.
   (d) $964 + $17 = $981.
8. Effective-interest amortization measures the amount of interest expense and net liability for each period on a present value basis. The interest expense and related amortization are based on the actual unpaid balance of the debt and the effective interest rate. Straight-line amortization is an approximation that does not take these factors into consideration. The effective-interest method is conceptually preferable but the straight-line method is used widely in practice because of computational simplicity and the materiality concept.

E10–12.

The effective interest rate for a bond is determined by market forces and not the company. American was able to specify the coupon rate for the bonds which determines the periodic interest payments. It appears that American intended to sell the bonds close to par value which would be achieved by having a coupon rate that was the same as the market rate. The market rate of interest continually changes as the result of such factors as inflation expectations and the level of business activity. It is virtually impossible to issue a bond at a point when the coupon rate and the market rate are exactly the same.

E10–13.

Students will typically offer one of two explanations:

- Normally, bonds that offer less than the market rate sell at a discount that results in a bond yield equal to the market rate of interest. While this is generally true, we do not think it explains the low interest rate for the Disney bond.
- The Disney bond includes a feature not seen in most bonds. It provides investors with the opportunity to participate in stock price appreciation while holding a more conservative investment. The conversion feature permits bond holders to convert their bonds into stock at a price of $29.46 per share. When this problem was written, Disney stock was selling for $33 per share. This conversion feature enhances the potential return for investors and permits the issuer to pay a lower rate of interest.

E10–14.

Assuming that both companies offer the same business risk, many people might prefer the bond that had the slightly higher yield which is Walt Disney at 9.5%. If interest rates were to fall significantly, companies might decide to call their bonds and issue new ones at a lower interest rate. In this case, a zero coupon bond offers an extra margin of protection. A zero is sold at a deep discount (say 60% of par). It would be very unusual to see a company call such a bond if it were callable at par. In this case, the PepsiCo bond would be preferred.

Many people who are retired desire to have a steady income without engaging in time-consuming transactions. These people would probably not want to buy a zero coupon bond which paid interest only at maturity.

E10–15.

Computations:

Interest:		
$1,400,000 x 8% x 1/2	=	$ 56,000
Present value:		
$1,400,000 x 0.7894	=	1,105,160
$ 56,000 x 7.0197	=	393,103
Issue price	=	$1,498,263

Req. 1

January 1:		
Cash (+A)	1,498,263	
Premium on Bonds Payable (+L)		98,263
Bonds Payable (+L)		1,400,000

Req. 2

June 30:		
Bond Interest Expense (+E, -SE)	43,717	
Premium on Bonds Payable (-L)	12,283	
Cash (-A)		56,000

Req. 3

June 30, 2009:		
Income statement:		
Bond interest expense	$ 43,717	
Balance sheet:		
Long-term Liabilities		
Bonds payable	$1,400,000	
Plus: Unamortized premium ($98,263 – $12,283)...	85,980	$1,485,980

E10–16.

Computations:

Interest:		
$2,000,000 x 5%	=	$ 100,000
Present value:		
$2,000,000 x 0.4350	=	870,000
$ 100,000 x 13.2944	=	1,329,440
Issue price	=	$2,199,440

Req. 1

January 1:		
Cash (+A)	2,199,440	
Premium on Bonds Payable (+L)		199,440
Bonds Payable (+L)		2,000,000

Req. 2

June 30:		
Bond Interest Expense (+E, -SE) ($2,199,440 x 4.25%)	93,476	
Premium on Bonds Payable (-L)	6,524	
Cash (-A)		100,000

Req. 3

June 30, 2009:		
Income statement:		
Bond interest expense	$ 93,476	
Balance sheet:		
Long-term Liabilities		
Bonds payable	$2,000,000	
Plus: Unamortized premium ($199,440 – $6,524)...	192,916	$2,192,916

E10–17.

Req. 1

Date	Cash Interest	Interest Expense	Premium Amortization	Net Liability Balance
1/1/2009				$10,278
12/31/2009	$500	$10,278 x 4% = $411	$89	10,189
12/31/2010	500	$10,189 x 4% = $408	92	10,097
12/31/2011	500	$10,097 x 4% = $404	96	10,001*

* $1 rounding error

Present value computation:

Principal:	$10,000 x .8890	$ 8,890
Interest:	500 x 2.7751	1,388
	Issue price	$10,278

Req. 2

	2009	2010	2011
December 31:			
Interest expense	$411	$408	$404
Bond liability……	$10,189	$10,097	$10,000*

***Immediately before repayment of principal

E10–18.

Req. 1

Cash is increased on the balance sheet. The statement of cash flows shows an inflow from financing activities. Bonds payable and premium on bonds payable are increased on the balance sheet. The debt-to-equity ratio will be increased.

January 1:		
Cash (+A)	376,774	
Premium on bonds payable (+L)		76,774
Bonds payable (+L)		300,000
Principal: $300,000 x .7441		$223,230
Interest: $18,000 x 8.5302		153,544
Issue (sale) price		$376,774

Req. 2

The interest expense will be increased on the income statement and the cash will be decreased on the balance sheet. The premium on bonds payable will be decreased on the balance sheet. The debt-to-equity ratio will be decreased and the times-interest-earned ratio will be decreased.

December 31:		
Interest expense (+E, -SE)	10,323	
Premium on bonds payable ($76,774 ÷10 periods) (-L)	7,677	
Cash ($300,000 x 6%) (-A).....		18,000

Req. 3

December 31, 2009:

Income Statement:

Bond Interest Expense	$10,323		
Balance Sheet:			
Long-term Liabilities			
Bonds Payable		$300,000	
Add: Unamortized premium	($76,774 - $7,677)	69,097	$369,097

E10–19.

Req. 1

Computations:

Interest:

$1,000,000 x 10% = $100,000 ÷ 2 = $50,000

Present value

$ 1,000,000 x .4564	=	456,400
$ 50,000 x 13.5903	=	679,515
		$ 1,135,915

June 30:

Cash (+A)	1,135,915	
Bond payable (+L)		1,000,000
Bond premium (+L)		135,915

Req. 2

The amortization of bond premium results in cash payments for interest that are higher than reported interest expense for the period.

E10–20.

Bond payable (-L)	600,000	
Loss on bond call (+E, -SE)	48,000	
Cash (-A)		648,000

E10–21.

Bond payable (-L)	500,000	
Loss on bond call (+E, -SE)	35,000	
Bond discount (-XL,+ L)		25,000
Cash (-A)		510,000

E10–22.

1. Impacts Statement of Cash Flows (SCF) : report $960,000 inflow in financing section
2. Does not impact SCF
3. Impacts SCF : report $54,000 payment in operating activities section
4. Impacts SCF : report $940,000 payment in financing section