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Chapter 09-10 Reporting and Interpreting Liabilities and Bonds

Session:

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Chapter 9: Reporting and Interpreting Liabilities

CHAPTER SUMMARY

Liabilities are obligations of either a known or estimated amount. Detailed information about the liabilities of an entity is important to many decision makers, whether internal or external, to the enterprise, because liabilities represent claims against the resources of an entity. The existence and amount of liabilities sometimes are easy to conceal from outsiders. The accounting model and the verification by an independent CPA are the best assurances that all liabilities are disclosed.

Current liabilities are short-term obligations that will be paid within the coming year or the normal operating cycle of the business, whichever is longer. All other liabilities (except contingent liabilities) are reported as long-term liabilities. A contingent liability is a potential claim due to some event or transaction that has happened and may lead to a liability, but whether it will materialize as an effective liability is not certain because it depends on some future event or transaction. At the end of the accounting period, a contingent liability must be recorded (as a debit to a loss account and a credit to a liability account) if (a) it is probable that a loss will occur and (b) if the amount of the loss can be reasonably estimated. Contingent liabilities that are reasonably possible must be disclosed in the notes to the financial statements.

The current ratio and accounts payable turnover ratio are liquidity ratios which provides an indication of whether a company can pay its current obligations as they come due.

Often, future and present value concepts must be applied in accounting for liabilities. These concepts focus on the time value of money (i.e., interest). Future value is the amount that a principal amount will increase in the future due to compound interest. Present value is the amount that a future principal amount is worth today. It is computed by a process of compounding or discounting future cash flows. Future and present values are related to (a) a single amount or (b) a series of equal periodic amounts (called annuities). Typical applications of future and present values are to create a fund, determine the cost of an asset, account for notes payable, and account for installment debts and receivables.

CHAPTER OBJECTIVES

LO1 Define, measure, and report current liabilities.
LO2 Use the current ratio.
LO3 Analyze the accounts payable turnover ratio.
LO4 Report notes payable and explain the time value of money.
LO5 Report contingent liabilities.
LO6 Explain the importance of working capital and its impact on cash flows.
LO7 Report long-term liabilities.
LO8 Compute present values.
LO9 Apply present value concepts to liabilities.

CHAPTER OUTLINE

I. UNDERSTANDING BUSINESS

1. Businesses finance the acquisition of their assets from funds supplied by creditors (debt) and funds provided by owners (equity). The mixture of debt and equity used by a business is called its capital structure.
2. The factors managers consider when selecting a capital structure are risk and cost.
   a. Debt is more risky than equity because principal and interest payments must be made on debt.
   b. Equity is less risky since dividend payments to owners are not legal obligations until declared by the board of directors.
3. Most companies include some debt (borrowed funds) in their capital structure because these funds may be used to earn a higher rate of return for the stockholders. Financial leverage is borrowing at one rate and earning at a different rate.
4. Companies determine the proper balance of short-term and long-term debt for their specific purposes.

II. LO1 DEFINE, MEASURE, AND REPORT CURRENT LIABILITIES.

A. Liabilities:

1. Liabilities are probable future sacrifices of economic benefits that arise from past transactions.
2. Liabilities are liquidated (paid off) by transferring assets or providing services to the creditor.
3. A liability is measured in terms of its cash equivalent (the cash that the creditor would accept to settle the liability) to settle the liability immediately.
   a. Interest to be paid on the debt is not included initially because interest accrues over time.
   b. After it has accrued, interest becomes a liability.
4. The list of liabilities on the balance sheet varies from one company to another.

B. Current Liabilities:

1. Current liabilities are short-term obligations that will be paid within the current operating cycle or one year, whichever is longer.
2. Specific operating activities of companies are usually financed, at least in part, by related current liabilities.
3. Current liability accounts that appear on most balance sheets:
   a. Accounts Payable (A/P or Trade Payable)
      1. Accounts payable includes amounts that are the obligations to pay suppliers in the normal course of business for the purchase of goods and services.
      2. For many companies, trade credit is a relatively inexpensive way to finance the purchase of inventory because interest doesn't normally accrue on accounts payable.
      3. Credit terms provide for the due date of payments.
         a. These terms may include cash discount provisions for early payment.
         b. Interest does not normally accrue on A/P if paid within the credit period.
      4. It is advisable for a company to pay A/P before the credit period ends.
         a. Late payments may jeopardize a positive working relationship with suppliers and threaten a source of quality goods and services.
         b. Financial analysts consider timely payments to suppliers in evaluating the "health" of a company.

b. Accrued Liabilities

1. Accrued liabilities are recorded for expenses that have been incurred but have not been paid by the end of the accounting period. The expense is recognized in one period, but the payment is made in another period.
2. These liabilities are typically recorded as adjusting entries (matching principle) at the end of the period since no cash transaction has taken place.
3. Examples of accrued expenses include:
    a. Accrued Taxes Payable
        i. A current liability computed by applying the applicable tax rates to taxable income earned by corporations.
        ii. The amount of income tax payable is the amount accrued but not paid at the end of the year.
    b. Accrued Compensation and Related Costs
        i. Accrued amounts associated with unpaid salaries and wages.
        ii. They may be reported as part of accrued liabilities or as a separate item on the balance sheet.
        iii. Salaries and wages payable are incurred but unpaid employee compensation.
        iv. A company reports employee income taxes withheld as a current liability since the company is an agent of the government. The withholding amounts are to be remitted to the federal (and perhaps state and local) government at a specified time.
        v. Payroll taxes include FICA (Social Security) tax. This liability arises from two sources. This tax is withheld from employees' gross wages based on a statutory percentage. This amount is also "matched" by the employer. Both the withholding and the matching amounts are current liabilities of the company. Additional types of payroll taxes may also be appropriate.
        vi. Other liabilities may result from employee benefits such as accrued vacations. In conformity with the matching principle, the cost of vacation time must be recorded in the year the employee performs services to earn the vacation. Other benefits include retirement programs and health insurance.
    c. Current Portion of Long-Term Debt
        i. The distinction between current and long-term debt is important to managers and financial analysts since current debt must usually be paid within the next year. Sufficient cash is needed to pay current liabilities.
        ii. If long-term debt is paid in installments, the amount due in the upcoming year is reclassified as a current liability. Also, when the payoff of long-term debt is due in the next accounting period, the entire amount is reclassified as a current liability.
    d. Deferred Revenues
        i. When a company collects cash before a product is delivered or a service is provided, a deferred or unearned revenue (a liability) is recorded.
        ii. This is a liability to the company since the goods must be delivered or the service must be performed before revenue can be recognized (the revenue principle).
        iii. If the promised act does not take place, the company must refund the money.

III. LO2 USE THE CURRENT RATIO.

A. Liquidity: the ability of a company to pay current obligations.

B. Current Ratio: a measure of liquidity.

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

C. Interpretation

1. Most companies use techniques for managing working capital. This is critical for the survival of a business.
2. The Current Ratio restates Working Capital as a ratio rather than as a flat number.
3. It shows the relationship of current assets to current liabilities rather than just the net.

IV. LO3 ANALYZE THE ACCOUNTS PAYABLE TURNOVER RATIO.

A. Accounts Payable Turnover Ratio

$$\text{Accounts Payable Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Accounts Payable}}$$

$$\text{Average Accounts Payable} = \frac{\text{AP balance at beginning of period} + \text{AP balance at end of period}}{2}$$

B. Interpretation

1. Evaluates effectiveness in managing payables; i.e., how quickly management is paying trade accounts.
2. A high ratio normally indicates that a company is paying its suppliers in a timely manner.
3. Cautions:
   - **a.** The A/P turnover ratio is an average based on all accounts payable.
   - **b.** Might not reflect reality if a company pays only some creditors on time.
   - **c.** Subject to manipulation, as managers can "catch up" on paying creditors at year-end to bring the ratio to an acceptable level.

V. LO4 REPORT NOTES PAYABLE AND EXPLAIN THE TIME VALUE OF MONEY.

A. Notes Payable

1. Many companies need to borrow to finance their operations.
2. The creditors are compensated for the use of the money they loan to businesses with interest.
3. Notes payable provide for interest over the lending term.
4. Notes payable are evidenced by written contracts that show all of the terms of the debt.
5. A note payable can be a current or non-current obligation, depending on its due date.
6. The time value of money is interest that is associated with the use of money over time. To the borrower, interest is an expense. To the lender, interest is revenue.

7. The calculation of simple interest is :

$$\text{Interest (I)} = \text{Principal (P)} \times \text{Interest Rate (R)} \times \text{Time (T)}$$

   a. Principal is the amount borrowed or loaned.
   b. Interest Rate is the annual rate unless stated otherwise.
   c. Time is the term of the loan in years or part of a year.
   d. The formula for the computation of simple interest is the same for short-term and long-term notes payable.
   e. Usually any accrued interest is a current liability (depending on the terms of the loan agreement).

8. Interest is an expense in the period the money is used (borrowed). In conformity with the matching principle, interest expense is recorded when it is incurred rather than when it is paid.

B. Time Value of Money

1. Creditors are willing to lend cash because they will earn interest in return for giving up the use of the money for a period.
2. Interest is the rent that is charged for the use of money.

VI. LO5 REPORT CONTINGENT LIABILITIES.

A. Estimated Liabilities on the balance Sheet

1. Some recorded liabilities are based on estimates because the exact amount will not be known until a future date.
2. Whether a situation produces a contingent liability depends on two factors:
   a. The liability must be probable, and
   b. The liability must be reasonably estimated
3. Before determining if a contingent liability should be recorded, an understanding of probability of occurrence is necessary.
   a. Probable - the future event is likely to occur.
   b. Reasonably possible - the chance of the occurrence of the future event is more than remote but less than probable.
4. Remote - the chance of occurrence of the future event is slight.
5. The conditions that can exist and how they should be handled are:

Condition	Probable	Reasonably Possible	Remote
Subject to estimation	Record as liability	Disclose in note	Disclosure not required
Not subject to estimate	Disclose in note	Disclose in note	Disclosure not required

6. Many businesses incur obligations related to the environment.
   a. After natural resources are extracted, companies are often expected to restore the land to its former condition.
   b. The cost of cleaning up pollution in the future is another environmental cost. These costs should be estimated and recorded as liabilities.

VII. LO6 EXPLAIN THE IMPORTANCE OF WORKING CAPITAL AND ITS IMPACT ON CASH FLOWS.

A. Working Capital Management

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

1. Working Capital is stated in dollars, not as a percent.
2. Working Capital is important to both managers and financial analysts. It has a significant impact on the success of a company.
3. Working Capital accounts must be actively managed to achieve a balance between costs and benefits.
   a. Too little working capital is risky. A company might not be able to meet its current obligations to creditors.
   b. Too much working capital might mean the company has tied up resources in unproductive assets.

B. Effect on Statement of Cash Flows

- Changes in working capital accounts have a direct impact on cash flows from operating activities.

VIII. LO7 REPORT LONG-TERM LIABILITIES.

A. Long-Term Liabilities

1. Noncurrent liabilities; i.e., all liabilities not properly classified as current liabilities.
2. Often incurred to finance the acquisition of operational (long-lived) assets.
   a. This is a wise move if the rate of return from using the asset exceeds the rate of interest to finance the asset acquisition.
   b. Long-term borrowing often allows an interest rate to be "locked-in" for a long period.
   c. Therefore, the uncertainty regarding future fluctuations of interest rates is removed for long-term debt compared to short-term borrowing.
3. Long-term liabilities include long-term notes payable, bonds payable, and mortgages payable. The borrowing agreement specifies the amount borrowed, the interest rate imposed, and the repayment schedule.
4. The borrowing agreement may also require that the borrower pledge specific assets as security for the liability.
   a. This type of pledge typically supports mortgage liabilities. Pledges of assets are common when purchasing real estate.
   b. This type of borrowing is called secured debt.
   c. Unsecured debt is when the creditor relies primarily on the integrity and general earning power of the borrower. Unsecured debt is typically more risky to the creditor than secured debt.
5. Long-term liabilities are presented on the balance sheet immediately following current liabilities.

B. Long-Term Notes Payable and Bonds

1. Companies may borrow long-term debt from financial organizations such as banks, insurance companies, or pension plans.
   a. This debt is often called a note payable, which is a written promise to pay a stated sum at one or more specified future dates (maturity dates).
   b. Borrowing from banks, insurance companies, pension plans, or other financial institutions is also called “private placement.”
2. Publicly traded debt includes the issuance of bonds. After bonds are issued, they may be traded in established markets. Bonds are also evidenced by written payment promises. They are discussed in detail in Chapter 10.
3. Accounting for long-term notes payable and bonds is based on the same concepts for recording short-term debt.

C. Lease Liabilities

1. Companies may lease rather than purchase assets.

2. Lease contracts permit a company to pay in the future for an asset it will use in the future.

3. There are two classifications of leases:

a. Operating lease

1. Generally does not create an immediate liability.
2. Lease payment amounts are recorded as incurred.
3. This type of lease is on a short term basis.

b. Capital lease

1. Represents the purchase and financing of the asset "acquired" through a lease agreement.
2. Generally recorded as an asset (for the purchase) and a liability (for the financing) if at least one of the following four criteria is met.
   a. The lease term is 75% or more of the asset's expected economic life.
   b. Ownership of the asset is transferred to the lessee at the end of the lease term.
   c. The lease contract permits the lessee to purchase the asset at a price that is lower than its fair market value.
   d. The present value of the lease payments is 90% or more of the fair market value of the asset when the lease is signed.

4. Most managers would prefer to record a lease as operating, because they would be required to report less long-term debt on the balance sheet.

IX. LO8 COMPUTE PRESENT VALUES.

A. Present Value Concepts

1. Present value (PV) focuses on the time value of money.

a. A dollar received today is worth more than a dollar received in the future (such as a year from now).

b. This is true because a dollar can be invested today and earns interest during that future period.

c. It is also true because the buying power of a dollar decreases in time due to inflation.

2. Managers may know the dollar amount of a cash flow that occurs in the future but they need to determine its value today. Also, managers may know the dollar amount of a cash flow that occurs today but they need to determine its value in the future.

B. Present Value of a Single Amount

1. The worth to you today of receiving a certain amount at some time in the future. It is a future amount discounted for compound interest.

$$\text{Present Value (PV) of a Single Amount} = \frac{1}{(1+i)^n}$$

2. This calculation is appropriate if you know what an investment will pay you in the future and you need to determine its value today (the amount to invest now). Three items must be known to find the PV of a single amount:

a. The amount to be received in the future.

b. The applicable discount rate (i) to be earned.

c. The number of periods (n) in which interest will be earned.

3. The amount of interest to be earned is subtracted from the future value.

a. This is referred to as compound discounting.

b. By using the PV table (Table A.1), the amount to be received in the future times the appropriate PV table factor will result in the PV amount.

4. Most analysts use present value tables, calculators, or Excel for computations rather than the PV formula.

C. Present Value of an Annuity

1. Annuity

a. A series of periodic cash receipts or cash payments that are characterized by

1. An equal payment (in amount) each interest period.
2. Annuities involve multiple cash flows over more than one period rather than a single amount.
3. Interest periods are of equal length
4. Interest rate remains constant over the annuity period.

b. Examples of common annuities are equipment payments, mortgage payments, and retirement benefits.

c. The equation for an annuity factor is:

$$\text{Present Value (PV) of an Annuity} = \frac{1 - \frac{1}{(1+i)^n}}{i}$$

X. LO9 APPLY PRESENT VALUE CONCEPTS TO LIABILITIES.

- There are many business transactions that require the use of FV and PV concept applications. Examples of these applications include the financing of operational asset purchases and investments in bond sinking funds.

XI. CHAPTER SUPPLEMENT A: INCOME TAXES AND RETIREMENT BENEFITS

1. Deferred Taxes

a. There are separate rules that govern the preparation of financial statements (GAAP) and tax returns (Internal Revenue Code).

1. Deferred tax liabilities are obligations that exist due to timing (temporary) differences caused by reporting revenues and expenses according to GAAP on a company's income statement while reporting items on the tax return according to the laws specified in the Internal Revenue Code.
2. Net income on the income statement often differs from taxable income on the tax return.

b. The matching principle requires that the tax expense on the income statement be based on the related income on that statement. Yet, the taxes currently payable are based on the amount reported on the tax return.

1. The difference of the tax expense and the taxes currently payable is reported in an account called Deferred Taxes.
2. This account can have either a <u>debit balance</u> (asset) or a <u>credit balance</u> (liability). Typically it is a liability.

c. Deferred tax exists due to the differences between GAAP and IRS requirements relating to when revenues and expenses are recognized.

1. These temporary differences are timing differences that give rise to deferred income taxes.
2. These differences will <u>reverse</u> (turn around) in the future.
3. When a temporary difference reverses, the deferred tax amount is reduced. An example of an item, which commonly causes a timing difference, is depreciation since the tax law method does not generally relate to the economic use of an operational asset for a business.

2. Retirement Benefits
- **a.** Often employers provide retirement programs for their employees. The matching principle requires that these expenses be recorded in the year the benefits of the employees' services are received by the company.
- **b.** There are two types of retirement programs:
  1. A defined contribution program obligates an employer to make required annual payments to a fund.
     a. These are recorded as pension expense.
     b. The fund invests the money so that revenue can be generated.
     c. The contributions along with the revenue earned (if any) in the fund provide payments to employees when they retire. The investing success (or lack of) determines the amounts available to retirees.
  2. A defined benefit program bases employees' retirement benefits on a percentage of the employee's compensation at retirement or a certain number of dollars for each year of employment or combination of the two.
     a. The pension expense to be recorded each year by the employer is based on the change in the current cash value of the employee's retirement package.
     b. Current value changes occur because:
        i. An employee is closer to receiving benefits.
        ii. Higher compensation or longer service increases retirement benefits.
        iii. Life expectancies of employees change.
     c. A liability is incurred for the results of these changes and their impact on the amount not yet funded.
- **c.** Pension expense and associated liabilities may be significant amounts for many companies. Therefore, they are of particular interest to analysts who are forecasting the future cash flows of a company.
- **d.** Employer-provided health care benefit programs that provide coverage to employees after retirement pose some complex accounting issues.
  1. The expense must be recorded during the period when employees provide services to the company.
  2. Estimates must be used to determine the amount of expense in the current period. In the health care arena, this is particularly challenging.

XII. CHAPTER SUPPLEMENT B: FEDERAL INCOME TAX CONCEPTS

1. Sole proprietorships and partnerships are not taxable entities per se. Corporations, being separate legal entities, are often subject to income taxes.

2. Corporations (regular) are liable for income taxes based on taxable income.
- **a.** The tax liability of a corporation is determined by applying the applicable tax rates to the taxable income of the company.
- **b.** Graduated rates are currently used for federal income tax purposes.

3. Differences often exist in net income for books and taxable income. Some common differences are:
- **a.** Municipal bond interest is included in net income but is excluded from taxable income.
- **b.** Rent collected in advance is excluded from net income but is included in taxable income.
- **c.** Proceeds from life insurance policies (e.g. key executive insurance) are included in net income but is excluded from taxable income.
- **d.** When corporations own less than 20% of another corporation’s stock they may exclude 70% of the dividend received from taxable income. They can exclude 80% of the dividend if they own between 20 – 80% and they may exclude 100% of the dividend if they own over 80% of the stock in another company. Yet, the entire dividend is included in book income.
- **e.** As mentioned, depreciation methods are also frequently different for tax and book purposes. For tax purposes, companies must use MACRS while there are several methods they can choose for book purposes.

4. Corporations spend considerable resources (time and money) to minimize the tax liability.
   a. Tax planning strategies are important considerations for management.
   b. The "least and latest rule" encourages companies to legally pay the smallest amounts. Tax payments are planned for the latest possible date.
   c. Tax evasion involves illegal means to avoid paying taxes that are due. Tax planning involves legal means to postpone paying taxes.

XIII. CHAPTER SUPPLEMENT C: PRESENT VALUE CONCEPTS USING EXCEL

1. Most present value problems in business are solved with financial calculators or Excel spreadsheets.
2. The formula for the present value of a single amount is

   =Payment/1(1+i)^n

   Where
   Payment is the cash payment made at some point in the future.
   i is the interest rate each period
   n is the number of periods in the problem

3. The formula for the present value of an annuity is built into Excel.
   Click on the insert function button (f_x)
   In the dropdown box:
   a. Enter the interest rate as a decimal in the *Rate* field.
   b. Enter the number of periods in the *Nper* field.
   c. Enter the payment as a negative amount in the *Payment* field.

XIV. CHAPTER SUPPLEMENT D: FUTURE VALUE CONCEPTS

1. Future value of a single amount

$$\text{Future Value (FV) of a Single Amount} = (1+\text{i})^{\text{n}}$$

   a. This calculation is appropriate if you plan to invest money today and you need to determine its value at a future date.
   b. Three items must be known to find FV of a single amount:
      1. The amount to be invested today.
      2. The applicable interest rate (*i*) to be earned.
      3. The number of periods (*n*) in which interest will be earned.
   c. The amount of interest earned (accrued) in one period is added to the invested amount. This sum earns interest for the next period and so forth. This is referred to as compound interest.
   d. By using the FV tables, the amount to be invested (PV) times the appropriate FV table factor will result in the FV amount.

2. Future Value of an Annuity

$$\text{Future Value (FV) of an Annuity} = \frac{(1+\text{i})^{\text{n}} - 1}{\text{i}}$$

   a. This includes compound interest on each payment from the date of payment to the end of the annuity term. Each payment accumulates less interest than the prior payments because the number of remaining periods decreases.
   b. Three items must be known to find it:
      1. The amount of each periodic payment.
      2. The applicable interest rate (*i*) to be earned.
      3. The number of periods (*n*) in which payments will be made.
   c. The amount of interest earned (accrued) in the first period is added to the first payment. When the second period's payment is made, it is added to the accumulated amount to earn (accrue) interest for that period and so on.
   d. By using the FV of an annuity tables, the amounts invested (PV) times the appropriate FV table factor will result in the future value amount.

CHAPTER 10: REPORTING AND INTERPRETING BONDS

CHAPTER SUMMARY

This chapter discusses bonds payable, which represent a primary way for corporations to obtain funds to acquire long-term assets and to expand a business. An important advantage of bonds payable is that the cost of borrowing the funds – interest expense – is deductible on the income statement (and for income tax purposes), which reduces the interest cost to the business.

Bonds may be sold at par amount, a premium, or a discount, depending on the difference between the stated interest rate and the market interest rate. In each case, bonds are recorded at the present value of their future cash flows. The issue price of a bond varies based on the relationship between the market rate and stated rate of interest. If the stated rate is higher than the market rate, the bonds will sell at a premium. Conversely, if the stated rate is lower than the market rate, the bonds will sell at a discount. If the stated rate and the market rate are the same, the bonds will sell at par. Discounts and premiums on bonds payable are adjustments to interest expense for the issuing company during the term of the bonds. Therefore, the discount or premium on bonds payable is amortized over the period outstanding from issue date to maturity date.

CHAPTER OBJECTIVES

LO1 Describe the characteristics of bonds.
LO2 Report bonds payable and interest expense for bonds sold at par and analyze the times interest earned ratio.
LO3 Report bonds payable and interest expense for bonds sold at a discount.
LO4 Report bonds payable and interest expense for bonds sold at a premium.
LO5 Analyze the debt-to-equity ratio.
LO6 Report the early retirement of bonds.
LO7 Explain how financing activities are reported on the statement of cash flows.

CHAPTER OUTLINE

I. UNDERSTANDING BUSINESS

1. The capital structure of a company is a mixture of debt and equity.
2. Corporations frequently raise debt capital by borrowing money through the issuance of bonds.
   a. Bonds are securities issued by corporations as well as government entities.
   b. Because of established markets, a bondholder may sell the bond before its maturity date to another investor via the bond exchange. This provides the bondholder with liquidity since the investment can be sold for cash at any time.

II. LO1 DESCRIBE THE CHARACTERISTICS OF BONDS.

A. Advantages of debt financing

1. Issuing bonds does not dilute ownership and control. Dilution would take place if additional stock were issued instead. Bondholders are not owners in the company and, thus, cannot vote.
2. Interest is tax deductible whereas dividends are not. Net interest cost is interest cost less any income tax savings associated with interest expense.
3. The liquidity of bond investments typically permits corporations to reduce the cost of long-term borrowing. This can give rise to positive financial leverage (borrowing at low rate and investing at a higher rate).

B. Disadvantages of debt financing

1. Required interest payments must be made each interest period. If payments are not made, there is a risk of bankruptcy.
2. The principal (par) of the bond must be paid at the maturity date. This is so even if the corporation has no earnings. On the other hand, dividends to stockholders usually materialize only if the company has earnings (or retained earnings).

C. Characteristics of Bonds Payable

1. There are many different characteristics for various bond issues. Different types of creditors have different risk and return preferences. Companies try to design features of bond issues that are attractive to different groups of investors to make the bonds more marketable.
2. Some key types of bonds are shown below:

Bond Classification		Bond Characteristics	
On the basis of collateral (assets):			
a.	Unsecured bonds (called debentures).	a.	Bonds that do not include a mortgage or pledge of specific assets as a guarantee of repayment at maturity.
b.	Secured bonds (often designated on the basis of the type of asset pledged, such as a real estate mortgage).	b.	Bonds that include the pledge of specific assets as a guarantee of repayment at maturity.
On the basis of early retirement:			
a.	Callable bonds.	a.	Bonds that may be called for early retirement at the option of the issuer.
b.	Convertible bonds.	b.	Bonds that may be converted to other securities of the issuer (usually common stock) at the option of the bondholder.

3. The bond contract is called a bond indenture.
   a. This specifies the legal provisions of the bonds.
   b. May also contain covenants, which place restrictions on the issuing company. Covenants provide reduced risk for the creditors.
4. The investor in a bond receives a bond certificate, which specifies the maturity date, interest rate, interest dates, and other provisions.
5. Other terminology associated with bond issues:
   a. Bond principal (par value, face amount, maturity value) is the amount payable at the maturity date. This amount is used to compute periodic interest payments.
   b. Stated rate is the rate of interest that will be paid on the bond principal. This interest rate is "stated" in the bond. The interest periods are usually annual or semiannual.
   c. A prospectus is a legal document given to potential (prospective) bond investors. It describes the issuing company, the bonds, and how the proceeds of the bonds will be used.
   d. A trustee (an independent party) is often appointed to represent the bondholders. A trustee's duties include ascertaining whether the issuing company fulfills all of the provisions of the bond indenture.

D. Reporting Bond Transactions
1. Corporate bond issues typically provide for two types of cash payments.
   a. The payment (many times a single payment) required when the bond matures is the principal.
   b. Interest payments are usually required over the life of the bond issue annually or semiannually. These payments represent an annuity and are computed by applying the stated interest rate (contract rate or coupon rate) to the principal of the bond.

$$\text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time}$$

2. Bonds may be sold at face value (par value) or at some amount above or below face value.
   a. When a bond's stated interest rate is less than the investors required rate of return (the market interest rate) they will be sold at a discount, an amount that is less than their face value.
   b. When a bond's stated interest rate is more than the investors required rate of return (the market interest rate), they will be sold at a premium, an amount that is more than their face value.
3. The market interest rate ("yield" interest rate or "effective" rate) is the rate creditors demand to compensate them for the risks related to the bond investment.
4. The market determines the price at which bonds will sell for. Using present value (PV) applications, two computations are required to determine the selling price of the bonds since two separate types of cash flows are usually associated with eventual bond payments.
   a. Each interest payment (an annuity) to be made in the future is multiplied by the appropriate PV factor (based on the market rate of interest) to determine the PV of future interest payments.
   b. The principal of the bond (often a single payment) will be paid at the maturity date. This amount is multiplied by the appropriate PV factor (based on the market rate of interest) to determine the PV of the future principal payment.
   c. The PV of future interest payments plus the PV of the principal payment equals the selling price of the bonds.
5. Bonds sell at par if the stated rate equals the market rate of interest. If they do not sell at par, one of two possibilities exist:
   a. Bonds will sell at a discount if the PV of the bonds is below par (that is, if the market rate exceeds the stated rate of interest).
   b. Bonds will sell at a premium if the PV of the bonds is above par (that is, if the stated rate exceeds the market rate of interest).
6. Corporations do not care if bonds sell at par, a discount, or a premium. That is, bonds are "worth" their future cash flows based on the market rate of interest when they are sold. Discounts are not "bad" and premiums are not "good". They are simply realities of basic economic events.

LO2 REPORT BONDS PAYABLE AND INTEREST EXPENSE FOR BONDS SOLD AT PAR AND ANALYZE THE TIMES INTEREST EARNED RATIO.

A. Bonds Issued at Par
  1. Bonds sell at their par value when the stated interest rate on the bonds is the same as the market rate required by investors.
    a. The reason is that the PV of the future cash flows associated with the bond is equal to the bond's par amount.
    b. The bonds are sold "at 100". This is 100% of the par value.
  2. To record bonds issued at par, cash is debited and bonds payable is credited for the principal amount.

Cash	xxx	
Bonds Payable		xxx

B. Reporting interest
  1. Interest Expense is reported on the Income Statement.
    a. Since interest relates to financing, the interest related to the bond is not normally included in Operating Expenses.
    b. Usually a deduction from "Income from Operations" – in the "Other Gains and Losses" section.
  2. Interest payments require a debit to bond interest expense and a credit to cash in the same amount. Under the matching principle, bond interest expense must be recorded when incurred. Therefore, if a company's year-end differs from the end of an interest period, an adjusting entry is required.
  3. When bonds are issued at par, the bond interest expense is the same amount as cash payments for interest since the effective (market) interest rate and the stated rate are the same.

C. Times interest earned ratio
  1. A measure of solvency.
  2. Helps to answer the question: Is the company generating sufficient resources from its profit-making activities to meet its current interest obligations?
  3. Generally, a high times interest earned ratio is viewed more favorably than a low one.

$$\text{Times Interest Earned} = \frac{\text{Net Income} + \text{Interest Expense} + \text{Income Tax Expense}}{\text{Interest Expense}}$$

III. LO3 REPORT BONDS PAYABLE AND INTEREST EXPENSE FOR BONDS SOLD AT A DISCOUNT.

A. Bonds sell at a discount (below par) when the stated interest rate on the bonds is less than the market rate required by investors.
  1. The reason is that the PV (based on the market rate) of the future cash flows associated with the bonds is less than the par amount.
  2. The bonds are sold at *less than* 100. That is, they are sold at *less than* 100% of par value. (For example, their price may be stated as 99 or 98.5, which is less than 100.)

B. Recording bonds issued at a discount:
  1. Cash is debited for the selling price (PV of future cash flows associated with the bond for principal and interest).
  2. Bonds payable is credited for the par value of the bonds (the amount to be paid at the maturity date).
  3. The discount is the difference of the debit to cash and the credit to bond payable. This difference is debited to the Discount on Bonds Payable account (a contra liability account).

Cash	xxx	
Discount on Bonds Payable	xxx	
Bonds Payable		xxx

  4. The balance sheet reports the bonds payable at the book value or carrying value (par value minus unamortized discount). At the maturity date, the carrying value will equal par (the payoff).
  5. The bond discount will be amortized over the life of the bond using one of two methods: straight-line or effective interest rate method of amortization.

C. Reporting Interest Expense on Bonds Issued at a Discount Using Straight-Line Amortization
  1. Interest payments require a debit to bond interest expense, which is *greater* than the cash payment for interest.

a. Using the straight-line amortization method, an equal amount (initial discount divided by the number of interest periods) of discount is credited to the Discount on Bonds Payable account.

Bond Interest Expense	xxx	
Discount on Bonds Payable		xxx
Cash		xxx

b. When the bonds mature, the Discount will be fully amortized.

c. The matching principle requires that interest expense be reported as incurred. Discount amortization is required to reflect the interest expense incurred.

2. Since bonds are recorded at their PV when issued, the accounting for the bond issue is unaffected by subsequent changes in the market rate of interest.

3. Although the straight-line method of amortizing is not accepted by GAAP, many companies use this method since the difference between the straight-line method and the effective interest rate method is frequently not material.

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

1. The effective-interest method for amortizing bond discounts and premiums derives the "true" interest expense for each interest period.

a. This method is conceptually superior to the simpler straight-line method.

b. In fact, GAAP states that straight-line amortization may only be used if the results are not materially different from the effective-interest method.

2. The computation of interest expense under the effective-interest method considers the actual amount borrowed instead of the maturity value of the bond. It is computed as follows:

$$\text{Bond Interest Expense} = \text{Bond Carrying Value} \times \text{Market Interest Rate at Issue}$$

The amortization of the discount is the difference between the calculated bond interest expense and the cash interest payment (or accrual).

4. The journal entries for interest follow the same format as discussed for straight-line amortization.
5. For a bond discount, the amount of interest expense increases over the life of the bond issue. The carrying value increases to the par value by maturity.

E. Zero Coupon Bonds

1. Zero coupon bonds do not pay periodic interest to investors. The coupon rate is zero. Therefore, these bonds are issued substantially below their maturity value.

2. An example of these "deep" discount bonds is U.S. Savings Bonds.

3. The accounting for a zero coupon bond is no different than any bond sold at a discount. However, the discount is much larger than other bond issues.

IV. LO4 REPORT BONDS PAYABLE AND INTEREST EXPENSE FOR BONDS SOLD AT A PREMIUM.

A. Bonds sell at a premium (above par) when the stated interest rate on the bonds is more than the market rate required by investors.

1. The reason is that the PV (based on the market rate) of the future cash flows associated with the bond is greater than the bond par value.

2. The bonds are sold at *more than* 100. That is, they are sold at *more than* 100% of par value. (For example, their price may be stated as 102 or 102.5, which is more than 100.)

B. Recording bonds issued at a premium:

1. Cash is debited for the selling price (PV of future cash flows associated with the bond for principal and interest).

2. Bonds payable is credited for the par value (the maturity amount).

3. The premium is the difference of the debit to cash and the credit to bonds payable. This difference is credited to the Premium on Bonds Payable account.

Cash		xxx	
	Premium on Bonds Payable		xxx
	Bonds Payable		xxx

4. The balance sheet reports the bonds payable at the book value or carrying value (par value plus unamortized premium). At the maturity date, the carrying value will equal par (the payoff).

C. Reporting Interest Expense on Bonds Issued at a Premium Using Straight-Line Amortization

1. Interest payments require a debit to bond interest expense, which is less than the cash payment for interest.

a. Using straight-line amortization, an equal amount (initial premium divided by the number of interest periods) of premium is debited to the Premium on Bonds Payable account.

Bond Interest Expense		xxx	
Premium on Bonds Payable		xxx	
	Cash		xxx

b. When the bonds mature, the Premium will be fully amortized.

c. The matching principle requires that interest be reported as incurred. Premium amortization is required to reflect the true interest expense incurred.

2. Since bonds are recorded at their PV when issued, the accounting for the bond issue is unaffected by subsequent changes in the market rate of interest.

D. Reporting Interest Expense on Bonds Issued at a Premium Using Effective-Interest Amortization

1. The amortization of the premium is the difference between the cash interest payment and the calculated bond interest expense (i.e. the accrual).

2. The journal entries for interest follow the same format as discussed for straight-line amortization except that the amounts have changed due to using the effective interest rate method.

3. For a bond premium, the amount of interest expense decreases over the life of the bond issue. The carrying value decreases to the par value by maturity.

V. LO5 ANALYZE THE DEBT-TO-EQUITY RATIO.

1. The debt-to-equity ratio is another measure of solvency.

2. It shows the relationship between the proportions of capital provided by creditors versus the amount provided by owners.

$$\text{Debt - to - Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Owners Equity}}$$

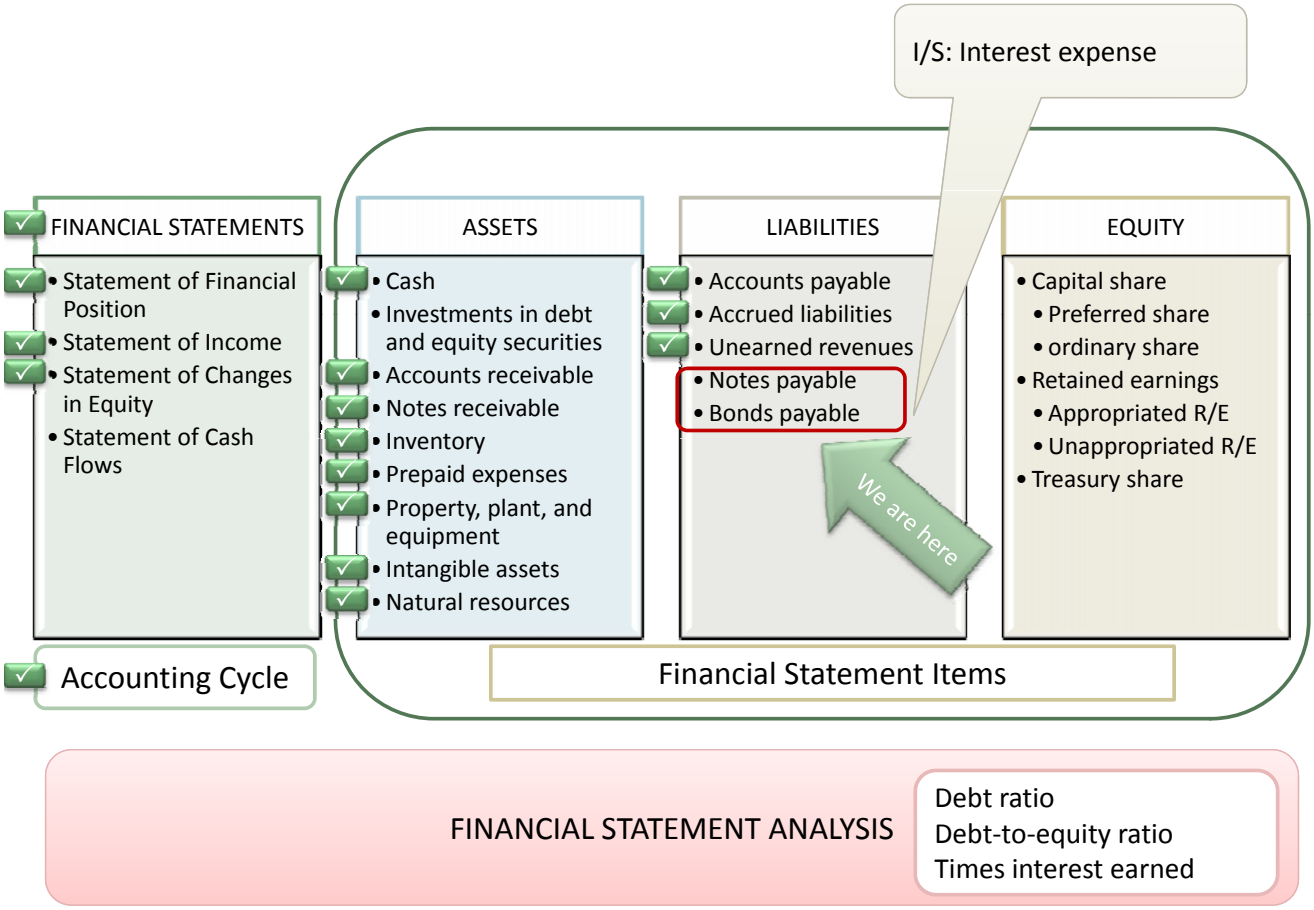
3. A high ratio suggests that a company relies heavily on funds provided by creditors. This increases the risk that a company may not be able to meet its contractual financial obligations during a business downturn.

VI. LO6 REPORT THE EARLY RETIREMENT OF BONDS.

1. A company may decide to buy back its own bonds prior to the maturity date. A company's decision to buy back its bonds may be based on rising interest rates in the market price. Bond prices move in the opposite direction of interest rates.
2. There are two ways for a company to buy its bonds.
   a. If the bonds have a call feature, the issuer has the option to buy them back before they mature. Typically, a call premium is paid to the creditors upon early retirement (if it is specified in the bond indenture).
   b. The issuer might buy back the bonds on the open market to avoid paying a call premium.
3. After considering any accrued interest at the date of purchase, the price paid for the bonds is compared to the carrying value of the bonds on the issuing company's books.
   a. If the price paid exceeds the carrying value, a loss on early retirement results. If the price paid is less than the carrying value, the company will record a gain on early retirement.
   b. A loss or a gain on early retirement of debt is included in the income statement as an extraordinary item.
4. The loss or gain on early retirement of debt is also a taxable event in that year.

VII. LO7 EXPLAIN HOW FINANCING ACTIVITIES ARE REPORTED ON THE STATEMENT OF CASH FLOWS.

1. Cash receipts from the issuance of bonds are shown as an inflow of cash in the financing section of the Statement of Cash Flows.
2. Repayments of bonds are shown as an outflow of cash in the financing section of the Statement of Cash Flows.
3. Interest payments are included in the operating section.



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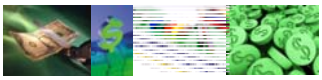

CHAPTER 9 & 10:
REPORTING AND INTERPRETING LIABILITIES AND BONDS

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Capital Structure

Capital Structure -- The acquisition of assets is financed from two sources: ***Debt & Equity***. The mix of debt and equity for a company is called the ***capital structure***.

Debt

Equity

Debt Financing -- Sources of Financing Provided by ***Creditors***

Interest is a legal obligations

Creditors can force bankruptcy

Equity Financing – Sources of Financing Provided by ***Owners***

Dividend is a board of directors' discretion

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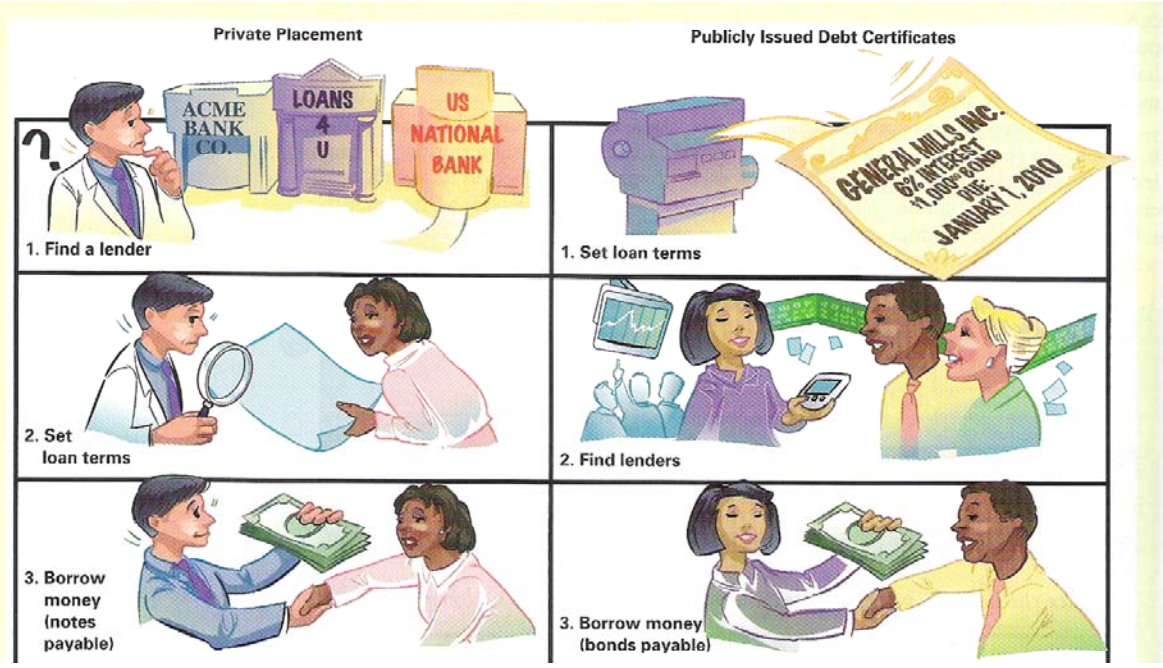
Sources of Debt Financing



Liabilities - Defined

Liabilities:

Probable debts or obligations of the entity that result from past transactions, which will be paid with assets or services.

Maturity = 1 year or less

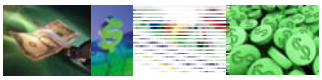
Current liabilities:

Short-term obligations that will be paid in cash (or other current assets) within the current operating cycle or one year, whichever is longer.

Maturity > 1 year

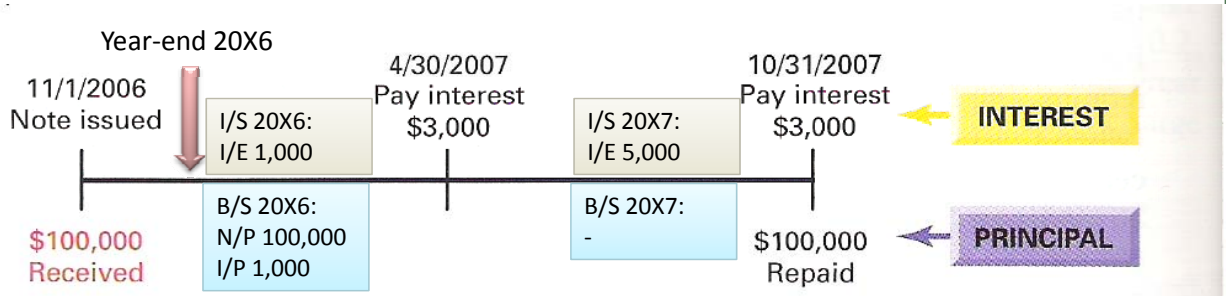
Noncurrent (long-term) liabilities:

All of the entity's obligations that are not classified as current liabilities.



Example: Notes Payable

Assume that on November 1, 20X6, Company A negotiates with Bank B to borrow ฿ 100,000 cash on a one-year note. Bank B charges 6% interest per year. Interest payments are to be made in two cash installments, on April 30 and October 31. The principal is to be repaid on the notes' October 31, 20X7, maturity date.



A		=	L		+	E	
Cash [A+]	+100,000		Notes payable [L+]	+100,000			
			Interest payable [L+]	+1,000		Interest expense [EXP+, E-]	-1,000
Cash [A-]	-3,000		Interest payable [L-]	-1,000		Interest expense [EXP+, E-]	-2,000
Cash [A-]	-103,000		Notes payable [L-]	-100,000		Interest expense [EXP+, E-]	-3,000

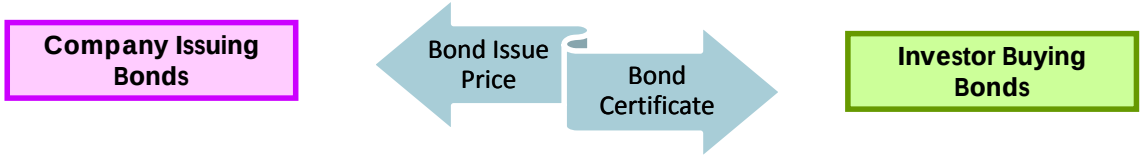
Bonds Payable

- **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.**

Pros	Cons
Bonds are debt, not equity, so the ownership and control of the company are not diluted.	The scheduled interest payments are legal obligations and must be paid each period.
Interest expense is tax-deductible.	A single, large par value payment is required 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.

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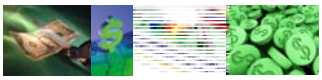


The Nature of Bonds (Cont.)

- **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.

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:

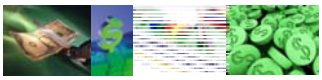
Market interest rate 12%

- 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

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.



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:

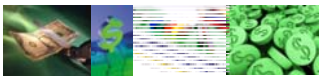
Date	General Journal	Debit	Credit
Jan. 1, 20X6	Dr. Cash [A+]	100,000	
	Cr. Bonds payable [L+]		100,000
	Sold 100,000 Baht of 9%, 5-year bonds at face value		

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		

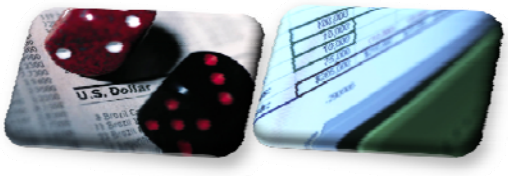
Note that, on December 31, the Company must record the accrued interest to interest payable .



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:

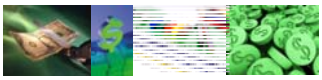
Date	General Journal	Debit	Credit
Jan. 1, 20X11	Dr. Bonds payable [L-]	100,000	
	Cr. Cash [A-]		100,000
	Paid 100,000 Baht par value to bondholders at maturity		



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***	

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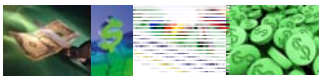


Accounting for the Issuance of Bonds -- @ Premium (Cont.)

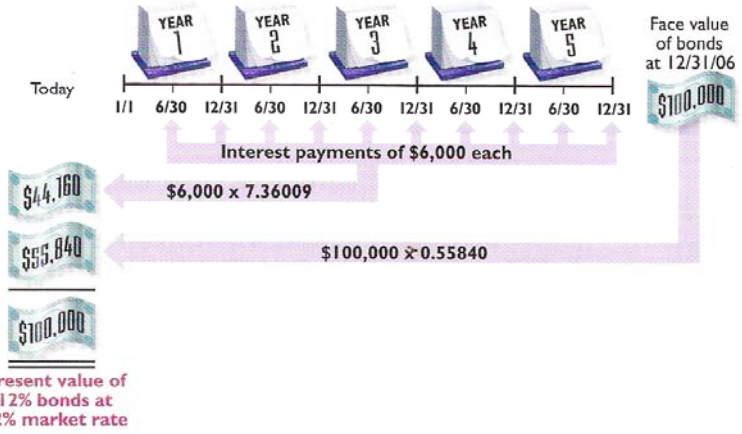
- Right after this entry is made, bonds payable would be presented on the statement of financial position as follows:

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

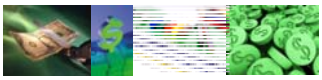
Face value Stated interest rate	Issue price Market interest rate
↓	↓
Used only to determine cash payments	Used only to determine the bond liabilities and interest expense

Case 1: Market Rate Above Stated Rate

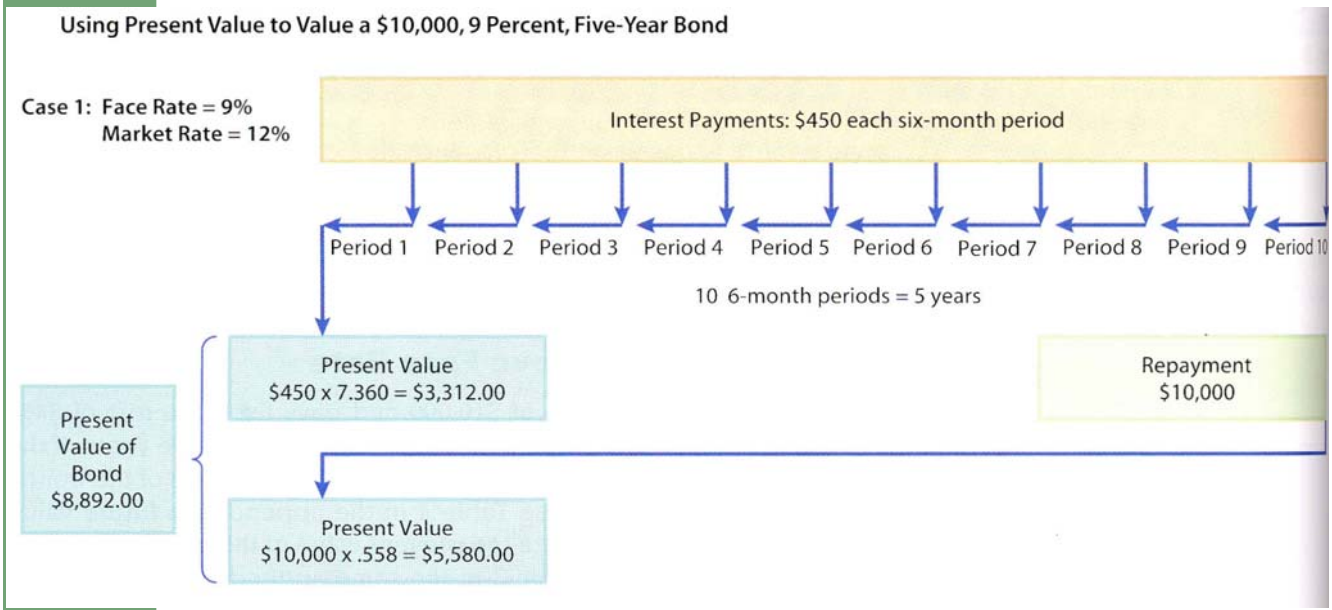
- **Example:**
  - Suppose a bond has a par value of 10,000 Baht and pays fixed interest of 450 Baht every six months (a 9 percent annual rate). The bonds is due in five years. If the market interest rate today is 12 percent, what is the present value of the bond?
    - Financial calculator:
      - 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.



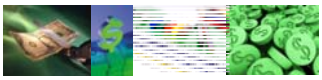
Using Present Value to Value a Bond -- Illustration



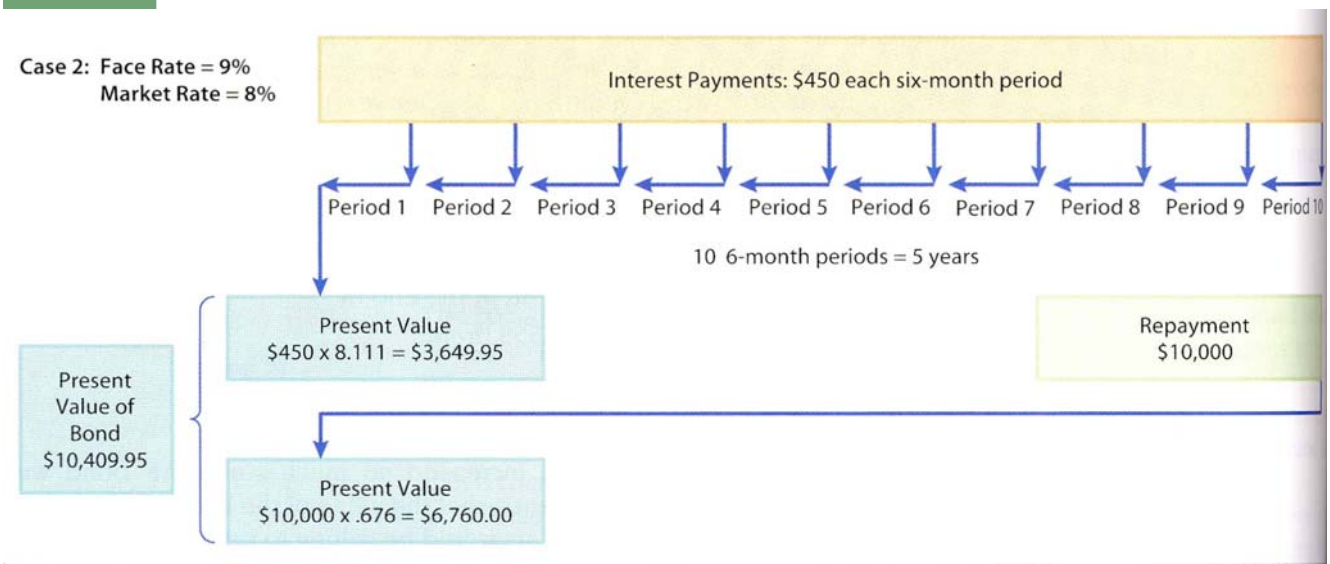
Case 2: Market Rate Below Stated Rate

- **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**

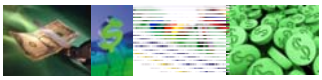


Using Present Value to Value a Bond -- Illustration



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.

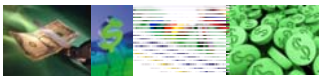


Amortizing a Bond Discount

- **Example:**
  - 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



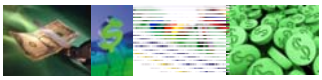
Amortizing a Bond Discount – Straight-line Method (Cont.)

- 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.)

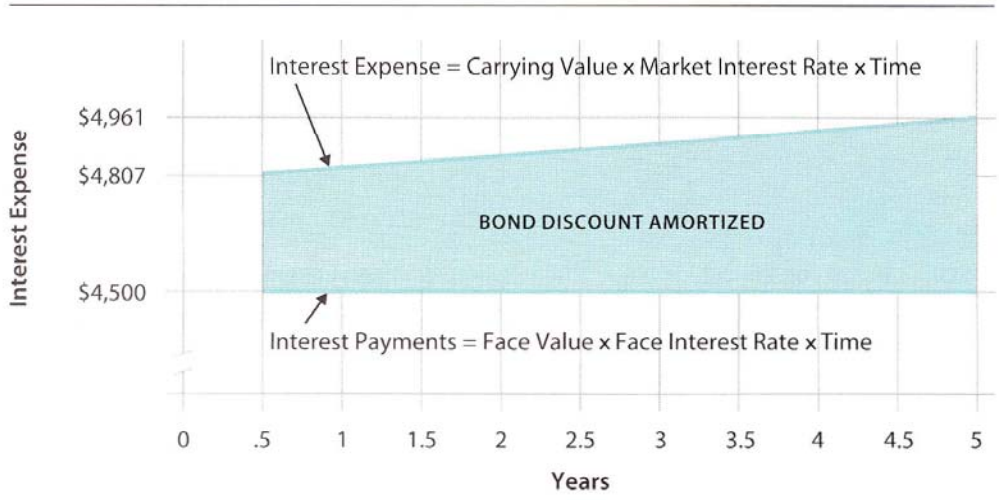
	A	*B*	*C*	*D*	*E*	*F*
Semiannual Interest Period	**Carrying Amount at Beginning of Period**	**Semiannual Interest Expense at 10% to Be Recorded (5% x A)**	**Semiannual Cash Interest Payment to Bondholders (4.5% x 100,000)**	**Amortization of Bond Discount (B-C)**	**Unamortized Bond Discount at End of 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:

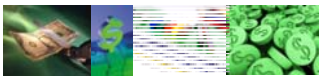
Date	General Journal	Debit	Credit
July 1, 20X6	Dr. Interest expense [Exp+, E-]	4,807	
	Cr. Cash [A-]		4,500
	Bonds discount [Contra L-, L+]		307
	Paid semiannual interest to bondholders of 9%, 5-year bonds		
	and amortized the bond discount		

Carrying Value and Interest Expense—Bonds Issued at a 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.



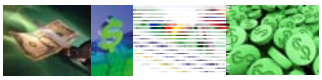
Amortizing a Bond Premium – Straight-line method (Cont.)

- **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		



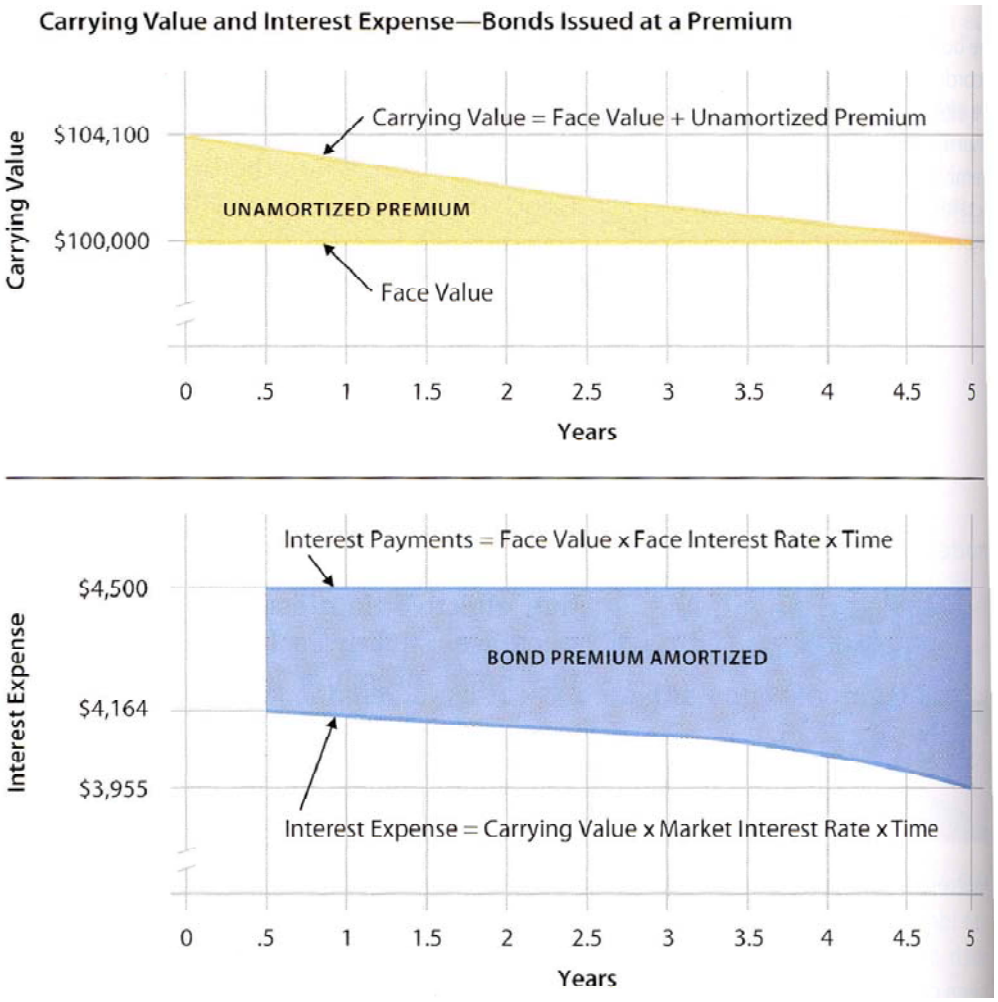
Amortizing a Bond Premium – Effective Interest Method (Cont.)

	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 b 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

BALANCE SHEETS (CONTI

President Bakery Public Company Limited
As at 31 December 2010 and 2009

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

	Note	Financial statements in which the equity method is applied		Separate financial statements	
		2010	2009	2010	2009
Liabilities and shareholders' equity					
Current liabilities					
Bank overdrafts	15	-	486,841	-	486,841
Trade accounts payable					
Related parties	9	159,114,135	135,484,402	159,114,135	135,484,402
Unrelated parties		257,281,087	204,357,825	257,281,087	204,357,825
Total trade accounts payable		416,395,222	339,842,227	416,395,222	339,842,227
Other accounts payable					
Related party	9	66,000	66,000	66,000	66,000
Unrelated parties		131,324,645	28,782,568	131,324,645	28,782,568

BALANCE SHEETS (CONTINUED)

President Bakery Public Company Limited
As at 31 December 2010 and 2009

(Unit : Baht)

	Note	Financial statements in which the equity method is applied		Separate financial statements	
		2010	2009	2010	2009
Liabilities and shareholders' equity					
Current liabilities					
Current portion of liabilities under finance lease agreements					
Related party	9, 16	26,707,771	12,137,455	26,707,771	12,137,455
Unrelated parties	16	25,472,715	33,366,189	25,472,715	33,366,189
Other current liabilities					
Corporate income tax payable		68,351,203	58,975,814	68,351,203	58,975,814
Accrued expenses		125,345,711	108,335,371	125,345,711	108,335,371
Others		60,707,849	46,988,493	60,707,849	46,988,493
Total other current liabilities		254,404,763	214,299,678	254,404,763	214,299,678
Total current liabilities		854,371,116	628,980,958	854,371,116	628,980,958

BALANCE SHEETS (CONTINUED)

President Bakery Public Company Limited
As at 31 December 2010 and 2009

(Unit : Baht)

	Note	Financial statements in which the equity method is applied		Separate financial statements	
		2010	2009	2010	2009
Liabilities and shareholders' equity					
Non-current liabilities					
Liabilities under finance lease agreements - net of current portion					
Related party	9, 16	44,932,307	29,201,100	44,932,307	29,201,100
Unrelated parties	16	32,478,209	17,989,718	32,478,209	17,989,718
Long-term loans from directors	9, 17	72,795,970	60,157,539	72,795,970	60,157,539
Long-term loans from employees	17	47,836,707	51,891,719	47,836,707	51,891,719
Other non-current liabilities		535,907	605,151	535,907	605,151
Total non-current liabilities		198,579,100	159,845,227	198,579,100	159,845,227
Total liabilities		1,052,950,216	788,826,185	1,052,950,216	788,826,185

15. BANK OVERDRAFTS

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

16. LIABILITIES UNDER FINANCE LEASE AGREEMENTS

(Unit : Baht)

	2010	2009
Liabilities under finance lease agreements - related party		
Liabilities under finance lease agreements	76,393,262	44,677,068
Less : Deferred interest expenses	(4,753,184)	(3,338,513)
Net	71,640,078	41,338,555
Less: Portion due within one year	(26,707,771)	(12,137,455)
Liabilities under finance lease agreements - related party - net of current portion	44,932,307	29,201,100
Liabilities under finance lease agreements - unrelated parties		
Liabilities under finance lease agreements	61,941,554	54,149,209
Less : Deferred interest expenses	(3,990,630)	(2,793,302)
Net	57,950,924	51,355,907
Less: Portion due within one year	(25,472,715)	(33,366,189)
Liabilities under finance lease agreements - unrelated parties - net of current portion	32,478,209	17,989,718

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.