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FINANCIAL ACCOUNTING
PART II (ACFN2082)

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Distance Education Program

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CHAPTER ONE: ACCOUNTING FOR PLANT, PROPERTY AND EQUIPMENT

Objectives of the chapter

After studying this chapter, you should be able to:

- ⇒ Describe property, plant, and equipment.
- ⇒ Identify the costs to include in initial valuation of property, plant, and equipment. Describe the accounting problems associated with self-constructed assets.
- ⇒ Describe the accounting problems associated with interest capitalization.
- ⇒ Understand accounting issues related to acquiring and valuing plant assets. Describe the accounting treatment for costs subsequent to acquisition.
- ⇒ Describe the accounting treatment for the disposal of property, plant, and equipment.

INTRODUCTION

Different huge Companies like **Boeing**, **Target**, and **Starbucks** use assets of a durable nature. Such assets are called **property, plant, and equipment**. Other terms commonly used are **plant assets** and **fixed assets**. We use these terms interchangeably. Property, plant, and equipment include land, building structures (offices, factories, warehouses), and equipment (machinery, furniture, tools).

1.1.Characteristics of plant, property and equipment

The major characteristics of property, plant, and equipment are as follows.

- A. ***They are acquired for use in operations and not for resale.*** Only assets used in normal business operations are classified as property, plant, and equipment. For example, an idle building is more appropriately classified separately as an investment. Land developers or sub-dividers classify land as inventory.
- B. ***They are long-term in nature and usually depreciated.*** Property, plant, and equipment yield services over a number of years. Companies allocate the cost of the investment in these assets to future periods through periodic depreciation charges. The exception is land, which is depreciated only if a material decrease in value occurs, such as a loss in fertility of agricultural land because of poor crop rotation, drought, or soil erosion.
- C. ***They possess physical substance.*** Property, plant, and equipment are tangible assets characterized by physical existence or substance. This differentiates them from intangible assets, such as patents or goodwill. Unlike raw material, however, property, plant, and equipment do not physically become part of a product held for resale.

1.2.ACQUISITION OF PROPERTY, PLANT, AND EQUIPMENT

Most companies use historical cost as the basis for valuing property, plant, and equipment. **Historical cost measures the cash or cash equivalent price of obtaining the asset and bringing it to the location and condition necessary for its intended use.** For example, companies like **Kellogg Co.** consider the purchase price, freight costs, sales taxes, and installation costs of a productive asset as part of the asset's cost. It then allocates these costs to future periods through depreciation. Further,

Kellogg **adds to the asset's original cost** any related costs incurred **after the asset's acquisition**, such as additions, improvements, or replacements, **if they provide future service potential.** Otherwise, Kellogg expenses these costs immediately.

Subsequent to acquisition, companies should not write up property, plant, and equipment to reflect fair value when it is above cost. The main reasons for this position are as follows.

1. Historical cost involves actual, not hypothetical, transactions and so is the most reliable.
2. Companies should not anticipate gains and losses but should recognize gains and losses only when the asset is sold. Even those who favor fair value measurement for inventory and financial instruments often take the position that property, plant, and equipment should not be revalued. The major concern is the difficulty of developing a reliable fair value for these types of assets. For example, how does one value a **General Motors** automobile manufacturing plant or a nuclear power plant owned by **Consolidated Edison**

However, if the fair value of the property, plant, and equipment is less than its carrying amount, the asset may be written down. These situations occur when the asset is impaired and in situations where the asset is being held for sale. A long-lived asset classified as held for sale should be measured at the lower of its carrying amount or fair value less cost to sell. In that case, a reasonable valuation for the asset can be obtained, based on the sales price. A long-lived asset is not depreciated if it is classified as held for sale. This is because such assets are not being used to generate revenues.

A. Cost of Land

All expenditures made to acquire land and ready it for use are considered part of the land cost. Thus, when **a company** purchases land on which to build a new store, its land costs typically include (1) the purchase price; (2) closing costs, such as title to the land, attorney's fees, and recording fees; (3) costs incurred in getting the land in condition for its intended use, such as grading, filling, draining, and clearing; (4) assumption of any liens, mortgages, or encumbrances on the property; and (5) any additional land improvements that have an indefinite life.

For example, when if a given company purchases land for the purpose of constructing a building, it considers all costs incurred up to the excavation for the new building as land costs. **Removal of**

old buildings—clearing, grading, and filling—is a land cost because this activity is necessary to get the land in condition for its intended purpose.

The company treats any proceeds from getting the land ready for its intended use, such as salvage receipts on the demolition of an old building or the sale of cleared timber, as **reductions in the price of the land**.

In some cases, when a company purchases land, it may assume certain obligations on the land such as back taxes or liens. In such situations, the cost of the land is the cash paid for it, plus the encumbrances. In other words, if the purchase price of the land is \$50,000 cash, but company assumes accrued property taxes of \$5,000 and liens of \$10,000, its land cost are \$65,000.

A given company also might incur **special assessments** for local improvements, such as pavements, street lights, sewers, and drainage systems. It should charge these costs to the Land account because they are relatively permanent in nature. That is, after installation, they are maintained by the local government. In addition, a company should charge any permanent improvements it makes, such as landscaping, to the Land account. It records separately any **improvements with limited lives**, such as private driveways, walks, fences, and parking lots, as Land Improvements.

These costs are depreciated over their estimated lives. **Generally, land is part of property, plant, and equipment.** However, if the major purpose of acquiring and holding land is speculative, a company more appropriately classifies the land as an **investment**. If a real estate concern holds the land for resale, it should classify the land as **inventory**.

In cases where land is held as an investment, what accounting treatment should be given for taxes, insurance, and other direct costs incurred while holding the land? Many believe these costs should be capitalized. The reason: They are not generating revenue from the investment at this time. Companies generally use this approach except when the asset is currently producing revenue (such as rental property).

B. Cost of Buildings

The cost of buildings should include all expenditures related directly to their acquisition or construction. These costs include (1) materials, labor, and overhead costs incurred during construction, and (2) professional fees and building permits. Generally, companies contract others to construct their buildings. Companies consider all costs incurred, from excavation to completion, as part of the building costs.

But how should companies account for an old building that is on the site of a newly proposed building? Is the cost of removal of the old building a cost of the land or a cost of the new building? Recall that **if a company purchases land with an old building on it, then the cost of demolition less its salvage value is a cost of getting the land ready for its intended use and relates to the**

land rather than to the new building. In other words, all costs of getting an asset ready for its intended use are costs of that asset.

C. Cost of Equipment

The term “equipment” in accounting includes delivery equipment, office equipment, machinery, furniture and fixtures, furnishings, factory equipment, and similar fixed assets. The cost of such assets includes the purchase price, freight and handling charges incurred, insurance on the equipment while in transit, cost of special foundations if required, assembling and installation costs, and costs of conducting trial runs. Costs thus include all expenditures incurred in acquiring the equipment and preparing it for use.

D. Self-Constructed Assets

Occasionally companies construct their own assets. Determining the cost of such machinery and other fixed assets can be a problem. Without a purchase price or contract price, the company must allocate costs and expenses to arrive at the cost of the **self-constructed asset**. Materials and direct labor used in construction pose no problem. A company can trace these costs directly to work and material orders related to the fixed assets constructed.

However, the assignment of indirect costs of manufacturing creates special problems. These indirect costs, called **overhead** or burden, include power, heat, light, insurance, property taxes on factory buildings and equipment, factory supervisory labor, depreciation of fixed assets, and supplies. Companies can handle indirect costs in one of two ways:

1. ***Assign no fixed overhead to the cost of the constructed asset.*** The major argument for this treatment is that indirect overhead is generally fixed in nature; it does not increase as a result of constructing one’s own plant or equipment. This approach assumes that the company will have the same costs regardless of whether it constructs the asset or not. Therefore, to charge a portion of the overhead costs to the equipment will normally reduce current expenses and consequently overstate income of the current period. However, the company would assign to the cost of the constructed asset variable overhead costs that increase as a result of the construction.
2. ***Assign a portion of all overhead to the construction process.*** This approach, called a **full-costing approach**, is appropriate if one believes that costs attach to all products and assets manufactured or constructed. Under this approach, a company assigns a portion of all overhead to the construction process, as it would to normal production. Advocates say that failure to allocate overhead costs understates the initial cost of the asset and results in an inaccurate future allocation. Companies should assign to the asset **a pro rata portion** of the fixed overhead to determine its cost. Companies use this treatment extensively because many believe that it results in a better matching of costs with revenues. If the allocated overhead results in recording construction costs in excess of the costs that an outside independent

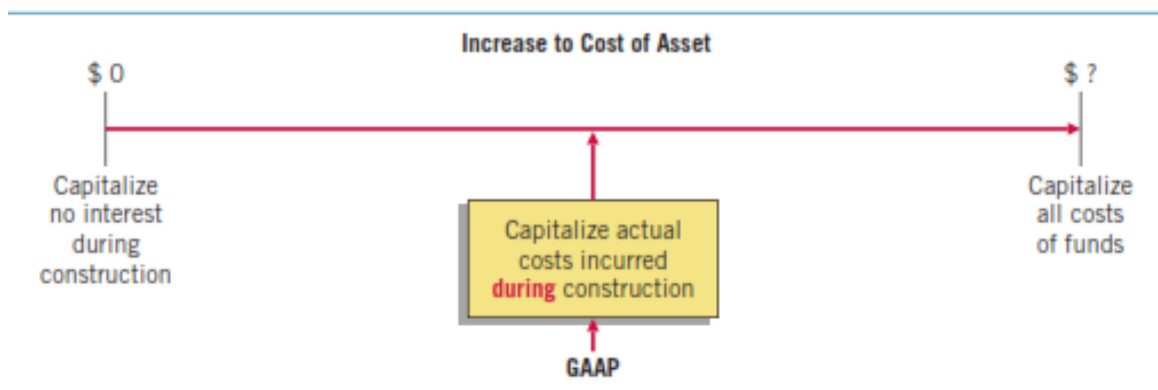
producer would charge, the company should record the excess overhead as a period loss rather than capitalize it. This avoids capitalizing the asset at more than its probable fair value.

E. Interest Costs During Construction

The proper accounting for interest costs has been a long-standing controversy. Three approaches have been suggested to account for the interest incurred in financing the construction of property, plant, and equipment:

- I. ***Capitalize no interest charges during construction.*** Under this approach, interest is considered a cost of financing and not a cost of construction. Some contend that if a company had used stock (equity) financing rather than debt, it would not incur this cost. The major argument against this approach is that the use of cash, whatever its source, has an associated implicit interest cost, which should not be ignored.
- II. ***Charge construction with all costs of funds employed, whether identifiable or not.*** This method maintains that the cost of construction should include the cost of financing, whether by cash, debt, or stock. Its advocates say that all costs necessary to get an asset ready for its intended use, including interest, are part of the asset's cost. Interest, whether actual or imputed, is a cost, just as are labor and materials. A major criticism of this approach is that imputing the cost of equity capital (stock) is subjective and outside the framework of a historical cost system.
- III. ***Capitalize only the actual interest costs incurred during construction.*** This approach agrees in part with the logic of the second approach—that interest is just as much a cost as are labor and materials. But this approach capitalizes only interest costs incurred through debt financing. (That is, it does not try to determine the cost of equity financing.) Under this approach, a company that uses debt financing will have an asset of higher cost than a company that uses stock financing. Some consider this approach unsatisfactory because they believe the cost of an asset should be the same whether it is financed with cash, debt, or equity.

Illustration 1-1 shows how a company might add interest costs (if any) to the cost of the asset under the three capitalization approaches.



GAAP requires the third approach—capitalizing actual interest (with modification). This method follows the concept that the **historical cost of acquiring an asset includes all costs (including interest) incurred to bring the asset to the condition and location necessary for its intended use**. The rationale for this approach is that during construction, the asset is not generating revenues. Therefore, a company should defer (capitalize) interest costs. [2] Once construction is complete, the asset is ready for its intended use and a company can earn revenues. At this point the company should report interest as an expense and match it to these revenues. It follows that the company should expense any interest cost incurred in purchasing an asset that is ready for its intended use.

To implement this general approach, companies consider three items: these are

- A. Qualifying assets.
- B. Capitalization period.
- C. Amount to capitalize.

Qualifying Assets

To qualify for interest capitalization, assets must require a period of time to get them ready for their intended use. A company capitalizes interest costs starting with the first expenditure related to the asset. Capitalization continues until the company substantially readies the asset for its intended use.

Assets that qualify for interest cost capitalization include assets under construction for a company's own use (including buildings, plants, and large machinery) and assets intended for sale or lease that are constructed or otherwise produced as discrete projects (e.g., ships or real estate developments).

Examples of assets that do not qualify for interest capitalization are (1) assets that are in use or ready for their intended use, and (2) assets that the company does not use in its earnings activities and that are not undergoing the activities necessary to get them ready for use. Examples of this second type include land remaining undeveloped and assets not used because of obsolescence, excess capacity, or need for repair.

Capitalization Period

The **capitalization period** is the period of time during which a company must capitalize interest.

It begins with the presence of three conditions:

1. Expenditures for the asset have been made.
2. Activities that are necessary to get the asset ready for its intended use are in progress.

3. Interest cost is being incurred.

Interest capitalization **continues as long as these three conditions are present**. The capitalization period ends when the asset is substantially complete and ready for its intended use.

Amount to Capitalize

The amount of interest to capitalize is limited to the lower of actual interest cost incurred during the period or avoidable interest. **Avoidable interest** is the amount of interest cost during the period that a company could theoretically avoid if it had not made expenditures for the asset. If the actual interest cost for the period is \$90,000 and the avoidable interest is \$80,000, the company capitalizes only \$80,000. Or, if the actual interest cost is \$80,000 and the avoidable interest is \$90,000, it still capitalizes only \$80,000. In no situation should interest cost include a cost of capital charge for stockholders' equity. Furthermore, GAAP requires interest capitalization for a qualifying asset only if its effect, compared with the effect of expensing interest, is material.

To apply the avoidable interest concept, a company determines the potential amount of interest that it may capitalize during an accounting period by multiplying the interest rate(s) by the **weighted-average accumulated expenditures** for qualifying assets during the period.

Weighted-Average Accumulated Expenditures. In computing the weighted-average accumulated expenditures, a company weights the construction expenditures by the amount of time (fraction of a year or accounting period) that it can incur interest cost on the expenditure.

To illustrate, assume a 17-month bridge construction project with current-year payments to the contractor of \$240,000 on March 1, \$480,000 on July 1, and \$360,000 on November 1. The company computes the weighted-average accumulated expenditures for the year ended December 31 as follows.

Expenditures		×	Capitalization Period*	=	Weighted-Average Accumulated Expenditures
Date	Amount				
March 1	\$ 240,000		10/12		\$200,000
July 1	480,000		6/12		240,000
November 1	360,000		2/12		60,000
	<u>\$1,080,000</u>				<u>\$500,000</u>

*Months between date of expenditure and date interest capitalization stops or end of year, whichever comes first (in this case December 31).

To compute the weighted-average accumulated expenditures, a company weights the expenditures by the amount of time that it can incur interest cost on each one. For the March 1 expenditure, the company associates 10 months' interest cost with the expenditure. For the expenditure on July 1,

it incurs only 6 months' interest costs. For the expenditure made on November 1, the company incurs only 2 months of interest cost.

Interest Rates. Companies follow these principles in selecting the appropriate interest rates to be applied to the weighted-average accumulated expenditures:

1. For the portion of weighted-average accumulated expenditures that is less than or equal to any amounts borrowed specifically to finance construction of the assets, **use the interest rate incurred on the specific borrowings.**
2. For the portion of weighted-average accumulated expenditures that is greater than any debt incurred specifically to finance construction of the assets, **use a weighted average of interest rates incurred on all other outstanding debt during the period.**

Illustration 1-3 shows the computation of a weighted-average interest rate for debt greater than the amount incurred specifically to finance construction of the assets.

	Principal	Interest
12%, 2-year note	\$ 600,000	\$ 72,000
9%, 10-year bonds	2,000,000	180,000
7.5%, 20-year bonds	5,000,000	375,000
	<u>\$7,600,000</u>	<u>\$627,000</u>
Weighted-average interest rate	Total interest	\$627,000
	Total principal	\$7,600,000
		= 8.25%

Comprehensive Example of Interest Capitalization

To illustrate the issues related to interest capitalization, assume that on November 1, 2011, Shalla Company contracted Pfeifer Construction Co. to construct a building for \$1,400,000 on land costing \$100,000 (purchased from the contractor and included in the first payment). Shalla made the following payments to the construction company during 2012.

January 1	March 1	May 1	December 31	Total
\$210,000	\$300,000	\$540,000	\$450,000	\$1,500,000

Pfeifer Construction completed the building, ready for occupancy, on December 31, 2012. Shalla had the following debt outstanding at December 31, 2012.

Specific Construction Debt

1. 15%, 3-year note to finance purchase of land and construction of the building, dated December 31, 2011, with interest payable annually on December 31 \$750,000

Other Debt

2. 10%, 5-year note payable, dated December 31, 2008, with interest payable annually on December 31 \$550,000
3. 12%, 10-year bonds issued December 31, 2007, with interest payable annually on December 31 \$600,000

Shalla computed the weighted-average accumulated expenditures during 2012 as shown in Illustration 1-4.

Expenditures		×	Current-Year Capitalization	=	Weighted-Average Accumulated Expenditures
Date	Amount		Period		
January 1	\$ 210,000		12/12		\$210,000
March 1	300,000		10/12		250,000
May 1	540,000		8/12		360,000
December 31	450,000		0		0
	<u>\$1,500,000</u>				<u>\$820,000</u>

Note that the expenditure made on December 31, the last day of the year, does not have any interest cost. Shalla computes the avoidable interest as shown in Illustration 1-5.

Weighted-Average Accumulated Expenditures	×	Interest Rate	=	Avoidable Interest
\$750,000		.15 (construction note)		\$112,500
70,000 ^a		.1104 (weighted average of other debt) ^b		7,728
<u>\$820,000</u>				<u>\$120,228</u>

^aThe amount by which the weighted-average accumulated expenditures exceeds the specific construction loan.

^bWeighted-average interest rate computation:

	Principal	Interest
10%, 5-year note	\$ 550,000	\$ 55,000
12%, 10-year bonds	600,000	72,000
	<u>\$1,150,000</u>	<u>\$127,000</u>

Weighted-average interest rate = $\frac{\text{Total interest}}{\text{Total principal}} = \frac{\$127,000}{\$1,150,000} = 11.04\%$

The company determines the actual interest cost, which represents the maximum amount of interest that it may capitalize during 2012, as shown in Illustration 1-6.

Construction note	\$750,000 × .15 =	\$112,500
5-year note	\$550,000 × .10 =	55,000
10-year bonds	\$600,000 × .12 =	72,000
Actual interest		<u>\$239,500</u>

The interest cost that Shalla capitalizes is the lesser of \$120,228 (avoidable interest) and \$239,500 (actual interest), or \$120,228.

Shalla records the following journal entries during 2012:

January 1

Land	100,000	
Buildings (or Construction in Process)	110,000	
Cash		210,000

March 1

Buildings	300,000	
Cash		300,000

May 1

Buildings	540,000	
Cash		540,000

December 31

Buildings	450,000	
Cash		450,000
Buildings (Capitalized Interest)	120,228	
Interest Expense (\$239,500 2 \$120,228)	119,272	
Cash (\$112,500 1 \$55,000 1 \$72,000)		239,500

Shalla should write off capitalized interest cost as part of depreciation over the useful life of the assets involved and not over the term of the debt. It should disclose the total interest cost incurred during the period, with the portion charged to expense and the portion capitalized indicated.

At December 31, 2012, Shalla discloses the amount of interest capitalized either as part of the non-operating section of the income statement or in the notes accompanying the financial statements. We illustrate both forms of disclosure, in Illustrations 1-7 and 1-8.

Income from operations		XXXX
Other expenses and losses:		
Interest expense	\$239,500	
Less: Capitalized interest	<u>120,228</u>	<u>119,272</u>
Income before income taxes		XXXX
Income taxes		<u>XXX</u>
Net income		<u>XXXX</u>

Note 1: Accounting Policies. *Capitalized Interest.* During 2012, total interest cost was \$239,500, of which \$120,228 was capitalized and \$119,272 was charged to expense.

Special Issues Related to Interest Capitalization

Two issues related to interest capitalization merit special attention:

1. Expenditures for land.
2. Interest revenue.

Expenditures for Land. When a company purchases land with the intention of developing it for a particular use, interest costs associated with those expenditures qualify for interest capitalization. If it purchases land as a site for a structure (such as a plant site), **interest costs capitalized during the period of construction are part of the cost of the plant, not the land.** Conversely, if the company develops land for lot sales, it includes any capitalized interest cost as part of the acquisition cost of the developed land.

However, it should **not** capitalize interest costs involved in purchasing land held **for speculation** because the asset is ready for its intended use.

Interest Revenue. Companies frequently borrow money to finance construction of assets. They temporarily invest the excess borrowed funds in interest-bearing securities until they need the funds to pay for construction. During the early stages of construction, interest revenue earned may exceed the interest cost incurred on the borrowed funds.

In general, **companies should not net or offset interest revenue against interest cost.** earned on specific borrowings should earned is directly related to the interest cost incurred on the specific borrowing.

Temporary or short-term investment decisions are not related to the interest incurred as part of the acquisition cost of assets. Therefore, companies should capitalize the interest incurred on qualifying assets whether or not they temporarily invest excess funds in short-term securities. Some criticize this approach because a company can defer the interest cost but report the interest revenue in the current period.

Observations

The interest capitalization requirement is still debated. From a conceptual viewpoint, many believe that, for the reasons mentioned earlier, companies should either capitalize **no interest cost** or **all interest costs**, actual or imputed.

1.3.VALUATION OF PROPERTY, PLANT, AND EQUIPMENT

Like other assets, **companies should record property, plant, and equipment at the fair value of what they give up or at the fair value of the asset received, whichever is more clearly evident.** However, the process of asset acquisition sometimes obscures fair value. For example, if a company buys land and buildings together for one price, how does it determine separate values for the land and buildings? We examine these types of accounting problems in the following sections.

Cash Discounts

When a company purchases plant assets subject to cash discounts for prompt payment, how should it report the discount? If it takes the discount, the company should consider the discount as a reduction in the purchase price of the asset. But should the company reduce the asset cost even if it does not take the discount?

Two points of view exist on this question. One approach considers the discount whether taken or not—as a reduction in the cost of the asset. The rationale for this approach is that the real cost of the asset is the cash or cash equivalent price of the asset.

In addition, some argue that the terms of cash discounts are so attractive that failure to take them indicates management error or inefficiency.

Proponents of the other approach argue that failure to take the discount should not always be considered a loss. The terms may be unfavorable, or it might not be prudent for the company to take the discount. At present, companies use both methods, though most prefer the former method.

Deferred-Payment Contracts

Companies frequently purchase plant assets on long-term credit contracts, using notes, mortgages, bonds, or equipment obligations. **To properly reflect cost, companies account for assets purchased on long-term credit contracts at the present value of the consideration exchanged between the contracting parties at the date of the transaction.**

For example, Greathouse Company purchases an asset today in exchange for a \$10,000 zero-interest-bearing note payable four years from now. The company would not record the asset at \$10,000. Instead, the present value of the \$10,000 note establishes the exchange price of the transaction (the purchase price of the asset).

Assuming an appropriate interest rate of 9 percent at which to discount this single payment of \$10,000 due four years from now, Greathouse records this asset at \$7,084.30 (\$10,000 \times .70843). [See Table 6-2 (page 357) for the present value of a single sum, $PV \$10,000 (PVF 4,9\%)$.]

When no interest rate is stated, or if the specified rate is unreasonable, the company imputes an appropriate interest rate. The objective is to approximate the interest rate that the buyer and seller would negotiate at arm's length in a similar borrowing transaction. In imputing an interest

rate, companies consider such factors as the borrower's credit rating, the amount and maturity date of the note, and prevailing interest rates. **The company uses the cash exchange price of the asset acquired (if determinable) as the basis for recording the asset and measuring the interest element.**

To illustrate, Sutter Company purchases a specially built robot spray painter for its production line. The company issues a \$100,000, five-year, zero-interest-bearing note to Wrigley Robotics, Inc. for the new equipment. The prevailing market rate of interest for obligations of this nature is 10 percent. Sutter is to pay off the note in five \$20,000 installments, made at the end of each year. Sutter cannot readily determine the fair value of this specially built robot. Therefore, Sutter approximates the robot's value by establishing the fair value (present value) of the note. Entries for the date of purchase and dates of payments, plus computation of the present value of the note, are as follows.

Date of Purchase		
Equipment	75,816*	
Discount on Notes Payable	24,184	
Notes Payable		100,000

*Present value of note = pvf in 5 years with 10% interest

$$= \$20,000 (3.79079) = \$75,816$$

End of First Year

Interest Expense	7,582	
Notes Payable	20,000	
Cash		20,000
Discount on Notes Payable		7,582

Interest expense in the first year under the effective-interest approach is \$7,582 [(\$100,000 - \$24,184) X 10%]. The entry at the end of the second year to record interest and principal payment is as follows.

End of Second Year

Interest Expense	6,340	
Notes Payable	20,000	
Cash		20,000
Discount on Notes Payable		6,340

Interest expense in the second year under the effective-interest approach is \$6,340 [(\$100,000 - \$24,184) - (\$20,000 - \$7,582)] X 10%.

If Sutter did not impute an interest rate for deferred-payment contracts, it would record the asset at an amount greater than its fair value and overstate depreciation expense. In addition, Sutter would understate interest expense in the income statement for all periods involved.

Lump-Sum Purchases

A special problem of valuing fixed assets arises when a company purchases a group of plant assets at a single **lump-sum price**. When this common situation occurs, the company allocates the total cost among the various assets on the basis of their relative fair values. The assumption is that costs will vary in direct proportion to fair value. This is the same principle that companies apply to allocate a lump-sum cost among different inventory items.

To determine fair value, a company should use valuation techniques that are appropriate in the circumstances. In some cases, a single valuation technique will be appropriate. In other cases, multiple valuation approaches might have to be used.

To illustrate, Norduct Homes, Inc. decides to purchase several assets of a small heating concern, Comfort Heating, for \$80,000. Comfort Heating is in the process of liquidation.

Its assets sold are:

	Book Value	Fair Value
Inventory	\$30,000	\$ 25,000
Land	20,000	25,000
Building	35,000	50,000
	\$85,000	\$100,000

Norduct Homes allocates the \$80,000 purchase price on the basis of the relative fair values (assuming specific identification of costs is impracticable) in the following manner.

Inventory	$\frac{\$25,000}{\$100,000} \times \$80,000 = \$20,000$
Land	$\frac{\$25,000}{\$100,000} \times \$80,000 = \$20,000$
Building	$\frac{\$50,000}{\$100,000} \times \$80,000 = \$40,000$

Issuance of Stock When companies acquire property by issuing securities, such as common stock, the par or stated value of such stock fails to properly measure the property cost. If trading of the stock is active, the market price of the stock issued is a fair indication of the cost of the property acquired. The stock is a good measure of the current cash equivalent price. For example, Upgrade Living Co. decides to purchase some adjacent land for expansion of its carpeting and cabinet operation. In lieu of paying cash for the land, the company issues to Deed land Company 5,000 shares of common stock (par value \$10) that have a fair value of \$12 per share. Upgrade Living Co. records the following entry.

Land (5,000 X \$12)	60,000
Common Stock	50,000
Paid-In Capital in Excess of Par—Common Stock	10,000

If the company cannot determine the market price of the common stock exchanged, it establishes the fair value of the property. It then uses the value of the property as the basis for recording the asset and issuance of the common stock.

Exchanges of Nonmonetary Assets

- The proper accounting for exchanges of nonmonetary assets, such as property, plant, and equipment, is controversial.
- Some argue that companies should account for these types of exchanges based on the fair value of the asset given up or the fair value of the asset received, with a gain or loss recognized.
- Others believe that they should account for exchanges based on the recorded amount (book value) of the asset given up, with no gain or loss recognized.
- Still others favor an approach that recognizes losses in all cases, but defers gains in special situations.
- Ordinarily companies account for the exchange of **nonmonetary assets** on the basis of **the fair value of the asset given up or the fair value of the asset received, whichever is clearly more evident**.
- Thus, companies **should recognize immediately** any gains or losses on the exchange. The rationale for immediate recognition is that most transactions have **commercial substance**, and therefore gains and losses should be recognized.

Meaning of Commercial Substance

- As indicated above, fair value is the basis for measuring an asset acquired in a nonmonetary exchange if the transaction has commercial substance.
- An exchange has **commercial substance** if the future cash flows change as a result of the transaction.
- That is, if the two parties' economic positions change, the transaction has commercial substance.
- For example, Andrew Co. exchanges some of its equipment for land held by Roddick Inc. It is likely that the timing and amount of the cash flows arising for the land will differ significantly from the cash flows arising from the equipment.
- As a result, both Andrew Co. and Roddick Inc. are in different economic positions.
- Therefore, the exchange has commercial substance, and the companies recognize a gain or loss on the exchange.
- ***What if companies exchange similar assets, such as one truck for another truck?***
- Even in an exchange of similar assets, a change in the economic position of the company can result.
- For example, let's say the useful life of the truck received is significantly longer than that of the truck given up. The cash flows for the trucks can differ significantly.
- As a result, the transaction has commercial substance, and the company should use fair value as a basis for measuring the asset received in the exchange.
- However, it is possible to exchange similar assets but not have a significant difference in cash flows.
- That is, the company is in the same economic position as before the exchange.

- In that case, the company recognizes a loss but generally defers a gain.
- As we will see in the examples below, use of fair value generally results in recognizing a gain or loss at the time of the exchange.
- Consequently, companies must determine if the transaction has commercial substance.
- To make this determination, they must carefully evaluate the cash flow characteristics of the assets exchanged.

Illustration 10-10 summarizes asset exchange situations and the related accounting.

As Illustration 1-10 indicates, companies immediately recognize losses they incur on all exchanges. The accounting for gains depends on whether the exchange has commercial substance. If the exchange has commercial substance, the company recognizes the gain immediately.

- However, the profession modifies the rule for immediate recognition of a gain when an exchange lacks commercial substance:
- If the company receives no cash in such an exchange, it defers recognition of a gain. If the company receives cash in such an exchange, it recognizes part of the gain immediately.

Illustration

To illustrate the accounting for these different types of transactions, we examine various loss and gain exchange situations.

Exchanges—Loss Situation

- When a company exchanges nonmonetary assets and a loss results, the company recognizes the loss immediately.
- The rationale: Companies should not value assets at more than their cash equivalent price; if the loss were deferred, assets would be overstated.
- Therefore, companies recognize a loss immediately whether the exchange has commercial substance or not.

For example, Information Processing, Inc. trades its used machine for a new model at Jerrod Business Solutions Inc. The exchange has commercial substance. The used machine has a book value of \$8,000 (original cost \$12,000 less \$4,000 accumulated depreciation) and a fair value of \$6,000. The new model lists for \$16,000. Jerrod gives Information Processing a trade-in allowance of \$9,000 for the used machine. Information Processing computes the cost of the new asset as follows.

List price of new machine	\$16,000
Less: Trade-in allowance for used machine	9,000
Cash payment due	7,000
Fair value of used machine	6,000
Cost of new machine	<u>\$13,000</u>

Information Processing records this transaction as follows.

Equipment	13,000	
Accumulated Depreciation—Equipment	4,000	
Loss on Disposal of Equipment	2,000	
Equipment		12,000
Cash		7,000

We verify the loss on the disposal of the used machine as follows.

Fair value of used machine	\$6,000
Less: Book value of used machine	8,000
Loss on disposal of used machine	<u>\$2,000</u>

Exchanges—Gain Situation

Has Commercial Substance.

Now let's consider the situation in which a nonmonetary exchange has commercial substance and a gain is realized.

In such a case, a company usually records the cost of a nonmonetary asset acquired in exchange for another nonmonetary asset at the **fair value of the asset given up**, and immediately recognizes a gain.

The company should use the **fair value of the asset received** only if it is more clearly evident than the fair value of the asset given up.

To illustrate, Interstate Transportation Company exchanged a number of used trucks plus cash for a semi-truck. The used trucks have a combined book value of \$42,000 (cost \$64,000 less \$22,000 accumulated depreciation). Interstate's purchasing agent, experienced in the secondhand market, indicates that the used trucks have a fair value of \$49,000. In addition to the trucks, Interstate must pay \$11,000 cash for the semi-truck. Interstate computes the cost of the semi-truck as follows.

Fair value of trucks exchanged	\$49,000
Cash paid	<u>11,000</u>
Cost of semi-truck	<u>\$60,000</u>

Interstate records the exchange transaction as follows.

Trucks (semi)	60,000	
Accumulated Depreciation—Trucks	22,000	
Trucks (used)		64,000
Gain on Disposal of Trucks		7,000
Cash		11,000

The gain is the difference between the fair value of the used trucks and their book value. We verify the computation as follows.

Fair value of used trucks		\$49,000
Cost of used trucks	\$64,000	
Less: Accumulated depreciation	<u>22,000</u>	
Book value of used trucks		<u>(42,000)</u>
Gain on disposal of used trucks		<u>\$ 7,000</u>

Lacks Commercial Substance—No Cash Received.

We now assume that the Interstate Transportation Company exchange lacks commercial substance. That is, the economic position of Interstate did not change significantly as a result of this exchange. In this case, Interstate defers the gain of \$7,000 and reduces the basis of the semi-truck. Illustration 1-15 shows two different but acceptable computations to illustrate this reduction.

Fair value of semi-truck	\$60,000	OR	Book value of used trucks	\$42,000
Less: Gain deferred	<u>7,000</u>		Plus: Cash paid	<u>11,000</u>
Basis of semi-truck	<u>\$53,000</u>		Basis of semi-truck	<u>\$53,000</u>

Interstate records this transaction as follows.

Trucks (semi)	53,000	
Accumulated Depreciation—Trucks	22,000	
Trucks (used)		64,000
Cash		11,000

If the exchange lacks commercial substance, the company recognizes the gain (reflected in the basis of the semi-truck) through lower depreciation expense or when it later sells the semi-truck, not at the time of the exchange.

Lacks Commercial Substance—Some Cash Received. When a company receives cash (sometimes referred to as “boot”) in an exchange that lacks commercial substance, it may immediately recognize a portion of the gain.

Illustration 1-16 shows the general formula for gain recognition when an exchange includes some cash.

$$\frac{\text{Cash Received (Boot)}}{\text{Cash Received (Boot) + Fair Value of Other Assets Received}} \times \text{Total Gain} = \text{Recognized Gain}$$

To illustrate, assume that Queenan Corporation traded in used machinery with a book value of \$60,000 (cost \$110,000 less accumulated depreciation \$50,000) and a fair value of \$100,000. It receives in exchange a machine with a fair value of \$90,000 plus cash of \$10,000. Illustration 1-17 shows calculation of the total gain on the exchange.

Fair value of machine exchanged	\$100,000
Less: Book value of machine exchanged	60,000
Total gain	<u>\$ 40,000</u>

Generally, when a transaction lacks commercial substance, a company defers any gain. But because Queenan received \$10,000 in cash, it recognizes a partial gain. The portion of the gain a company recognizes is the ratio of monetary assets (cash in this case) to the total consideration received. Queenan computes the partial gain as follows.

$$\frac{\$10,000}{\$10,000 + \$90,000} \times \$40,000 = \$4,000$$

Because Queenan recognizes only a gain of \$4,000 on this transaction, it defers the remaining \$36,000 (\$40,000 - \$4,000) and reduces the basis (recorded cost) of the new machine. Illustration 10-19 shows the computation of the basis.

Fair value of new machine	\$90,000	OR	Book value of old machine	\$60,000
Less: Gain deferred	<u>36,000</u>		Portion of book value presumed sold	<u>6,000*</u>
Basis of new machine	<u>\$54,000</u>		Basis of new machine	<u>\$54,000</u>
				$\frac{\$10,000}{\$100,000} \times \$60,000 = \$6,000$

Queenan records the transaction with the following entry.

Cash	10,000	
Machinery (new)	54,000	
Accumulated Depreciation—Machinery	50,000	
Machinery (old)		110,000
Gain on Disposal of Machinery		4,000

The rationale for the treatment of a partial gain is as follows: Before a nonmonetary exchange that includes some cash, a company has an unrecognized gain, which is the difference between the book value and the fair value of the old asset. When the exchange occurs, a portion of the fair value is converted to a more liquid asset. The ratio of this liquid asset to the total consideration received is the portion of the total gain that the company realizes. Thus, the company recognizes and record that amount.

Illustration 1-20 presents in summary form the accounting requirements for recognizing gains and losses on exchanges of nonmonetary assets.

1. Compute the total gain or loss on the transaction. This amount is equal to the difference between the fair value of the asset given up and the book value of the asset given up.
2. If a loss is computed in step 1, always recognize the entire loss.
3. If a gain is computed in step 1,
 - 3.1. And the exchange has commercial substance, recognize the entire gain.
 - 3.2. And the exchange lacks commercial substance, and no cash is involved, no gain is recognized.
 - 3.3. and some cash is given, no gain is recognized.
 - 3.4. and some cash is received, the following portion of the gain is recognized:

Accounting for Contributions

Companies sometimes receive or make contributions (donations or gifts).

Such contributions are called **nonreciprocal transfers**, transfer assets in one direction.

A contribution is often some type of asset (such as cash, securities, land, buildings, or use of facilities), but it Also could be the forgiveness of a debt.

When companies acquire assets as donations, a strict cost concept dictates that the valuation of the asset should be zero.

However, a departure from the cost principle seems justified; the only costs incurred (legal fees and other relatively minor expenditures) are not a reasonable basis of accounting for the assets acquired.

To record nothing is to ignore the economic realities of an increase in wealth and assets. Therefore, companies use the **fair value of the asset** to establish its value on the books.

What then is the proper accounting for the credit in this transaction?

Some believe the credit should be made to Donated Capital (an additional paid-in capital account).

This approach views the increase in assets from a donation as contributed capital, rather than as earned revenue.

Example

Care Ethiopia donated a land, equipment and building to BCD Company. The current fair value of the land, equipment and building is Br. 120,000; 80,000; and 250,000 respectively.

Instruction: Journalize the above information in the books of BCD Company

Equipment----- 80,000.00

Land ----- 120,000.00

Building ----- 250,000.00

Donated Capital -----450,000.00

- Others argue that companies should report donations as revenues from contributions.
- Their reasoning is that only the owners of a business contribute capital.
- At issue in this approach is whether the company should report revenue immediately or over the period that the asset is employed.
- For example, to attract new industry a city may offer land, but the receiving enterprise may incur additional costs in the future
- (e.g., transportation or higher state income taxes) because the location is not the most desirable. As a consequence, some argue that company should defer the revenue and recognize it as the costs are incurred.
- The FASB's position is that **in general, companies should recognize contribution received as revenues in the period received.**

Companies measure contributions at the fair value of the assets received.

To illustrate, Max Wayer Meat Packing, Inc. has **interperspect** IFRS provides detailed guidance on how to account for contributions and government grants. Recently accepted a donation of land with a fair value of \$150,000 from the Memphis

Industrial Development Corp. In return Max Wayer Meat Packing promises to build a packing plant in Memphis. Max Wayer's entry is:

Land	150,000	
Contribution Revenue		150,000

When a company contributes a nonmonetary asset, it should record the amount of the donation as an expense at the fair value of the donated asset.

If a difference exists between the fair value of the asset and its book value, the company should recognize a gain or loss.

To illustrate, Kline Industries donates land to the city of Los Angeles for a city park. The land cost \$80,000 and has a fair value of \$110,000. Kline Industries records this donation as follows:

Contribution Expense	110,000	
Land		80,000
Gain on Disposal of Land		30,000

- In some cases, companies promise to give (pledge) some type of asset in the future.
- Should companies record this promise immediately or when they give the assets?
- If the promise is **unconditional** (depends only on the passage of time or on demand by the recipient for performance), the company should report the contribution expense and related payable immediately.
- If the promise is **conditional**, the company recognizes expense in the period benefited by the contribution, generally when it transfers the asset.

1.4. TREATMENT OF COSTS INCURRED SUBSEQUENT TO ACQUISITION

Expenditure relating to plant assets normally is made throughout the economic life of the assets. Whether these expenditures should be capitalized (capital expenditure) or charged against current revenue (revenue expenditure) is always an issue to be addressed.

Capital Expenditures- are expenditures that improve the operating efficiency (or capacity) or costs incurred to achieve greater future benefits. These expenditures are included in the cost of the assets or to be capitalized.

An addition - is an enlargement to the physical layout of a plant asset. Suppose for example, if a new wing is added to a building, the benefits from the expenditure will be received over several years, and the amount paid for it should be debited to the asset account.

Betterment- is an improvement that does not add to the physical layout of the asset. These costs are most of the time referred as *renewal costs (or plant modification costs)*. Installation of an air conditioning system is an example of betterment. The additional value could be:

Extending the economic life of plant assets

Increasing the rate of output

Lowering the cost of operation per unit of output

Its cost should be charged (debited) to an asset account.

Another types of capital expenditures include **extraordinary repairs**. Extraordinary repairs are repairs of a more significant nature. They affect the estimated residual value or estimated useful life of an asset.

Revenue expenditures are expenditures incurred in order to maintain the normal operating efficiency of the asset and treated as current expenses

Among the more usual kinds of revenue expenditures for plant asset are the repairs, maintenance, lubrication, Cleaning and inspection necessary to keep an asset in good working condition.

Ordinary repairs are expenditures that are necessary to keep an asset in good operating conditions. Trucks must have tune-ups, their tires and batteries must be replaced regularly, and other routine repairs must be made. Offices and halls must be painted regularly, and broken tiles or woodwork must be replaced. Such repairs benefits only the current period and therefore must be charged against the revenue in the current fiscal period.

1.4. DEPRECIATION AND DEPLETION

1.4.1. DEPRECIATION

The concept of depreciation is linked closely to the measurement of net income. Because part of the service potential of depreciable plant assets is exhausted in the revenue generating process each accounting period, the cost of these services must be deducted from revenue in the measurement of net income; the expired cost must be recovered before a business enterprise is considered “as well off” as at the beginning of the period. Depreciation is the measurement of this expired cost.

To accountants, depreciation is not a matter of valuation but a means of cost allocation. Assets are not depreciated on the basis of a decline in their fair market value, but on the basis of systematic charges to expense. Depreciation is defined as the accounting process of allocating the cost of tangible assets to expense in a systematic and rational manner to those periods expected to benefit from the use of the asset.

1.4.1.1.Factors in the estimation of periodic depreciation

Before a pattern of charges to revenue can be established, three basic questions must be answered:

1. What depreciable basis is to be used for the asset?
2. What is the asset's useful life (Economic life)?
3. What method of cost allocation is best for this asset?

Depreciable Base for the Asset

The base established for depreciation is a function of two factors: the original cost and salvage or disposal value. We discussed historical cost in unit 4. Salvage value is the estimated amount that will be received at the time the asset is sold or removed from service. It is the amount to which the asset must be written down or depreciated during its useful life. To illustrate, if an asset has a cost of Br. 10, 000 and a salvage value of Br. 1, 000, its depreciable base or depreciable cost is Br. 9, 000 (Br. 10, 000 – Br. 1, 000). From a practical standpoint, salvage value is often considered to be zero because its valuation is small. Some long-lived assets, however, has substantial values.

The scrapping or removal of plant assets such as buildings, structures, and heavy equipment may involve substantial costs in the year of retirement. Theoretically, removal costs should be estimated and included in the depreciation base. The inclusion of removal costs in the depreciation base means that the entire cost involved in obtaining services from plant assets will be allocated to the revenue generated by the assets, without regard to the timing of the expenditure. In practice, however, removal costs may be either disregarded or netted against the estimated residual value of the assets. The depreciable base for a plant asset thus becomes:

$$\text{Depreciable base} = \text{Cost} - \text{Estimated salvage value (net)}$$

Estimate of Economic Life

The economic life of a plant asset is the total units of service expected to be derived from the asset. Accountants commonly measure economic life of a plant asset in terms of time units, for example, months or years. Economic life of a plant asset also may be measured in terms of output or activity, expressed in such physical units as miles, or machine-hours. Forces that tend to limit the economic life of a plant asset should be considered in the determination of the type of unit of service to use

for a specific asset or group of assets. The cause of a decrease in economic life may be divided into physical deterioration (including causalities), and functional or economic factors.

Physical deterioration results largely from wear and tear from use and the forces of nature. These physical forces terminate the usefulness of plant assets by rendering them incapable of performing the service for which they were intended and thus set the maximum limit on economic life. Unusual events such as accidents, floods, and earthquakes also serve to terminate or reduce the economic life of plant assets.

Functional or economic factors may render a plant asset that is in good physical condition no longer useful because it is not economical to keep the asset in service, or because of legal or income tax considerations related to the use of the asset. Two primary causes of functional depreciation are obsolescence and inadequacy obsolescence refers to the effect of innovations and technological improvements on the economic life of a plant assets. Inadequacy refers to the effect of growth and changes in the scale of a business operation in terminating the economic life of plant assets.

The choice of an appropriate unit of economic life of a plant asset also requires a determination of the causes of depreciation. The objective is to choose the unit most closely related to the cause of service exhaustion. When the economic life of a plant asset is limited largely by the effect of physical deterioration, a unit that reflects physical use of the asset is appropriate. For example, hours of service might be chosen as the unit of economic life of an electric motor; or miles of service for a truck. In contrast, the physical deterioration that limits the economic life of buildings probably is related more closely to the passage of time than to usage. Thus, an estimated economic life in terms of years is more appropriate for buildings.

Depreciation Methods

When the economic life of a plant asset has been estimated, and its depreciation base established, there remains the problem of determining the portion of cost that will expire with each unit of economic life. There are two major variables to be considered in reaching a solution to this problem:

1. The quality of services used may be equal or may differ during each accounting period of economic life.
2. The cost of various units of service may be equal or may differ during each accounting period of economic life.

There are several depreciation methods that attempt to recognize those factors in varying degrees. They may be classified as follows:

1. Straight-line method
2. Accelerated methods

- a. Declining-balance method
 - b. Sum-of-the-years'-digits method
- 3. Units-of-output method
- 4. Special depreciation methods
 - Inventory method
 - Retirement and replacement method
 - Group and composite method
 - Compound interest method

A. Straight-line Method

The straight-line method is based on the assumption that a plant asset declines in usefulness at a constant rate. The straight-line method relates depreciation directly to the passage of time rather than to the asset's use, resulting in a constant amount of depreciation recognized per time period.

The formula for computing periodic straight-line depreciation is:

Annual straight-line depreciation =

To illustrate the straight-line method of depreciation, assume that a machine is acquired on January 2, 1990 for Br. 7, 000 and that the net residual value of the machine at the end of four years of economic life is estimated at Br. 1, 000. The depreciation expense of the machine over its economic life is:

Annual depreciation expense = $\frac{\text{Cost} - \text{Residual Value}}{\text{Useful Life}}$ = Br. 1, 500

At the end of each year, depreciation expense of this machine is recorded as follows:

Depreciation Expense.....	1, 500
Accumulated depreciation-machine.....	1, 500

Check Your Progress –1

1. Given the following data for Jupiter Company for equipment.

Acquisition cost, January 1, 1995.....Br. 6, 600

Residual value.....600

Estimated Economic life.....5 years

Compute depreciation expense for 1995 using straight-line method?

B. Accelerated Method

The assumption that plant assets yield either a greater quantity of service or more valuable service in early years of their economic life has led accountants to devise methods of depreciation that result in larger amounts of depreciation in early years of economic life, and smaller amounts in later years. The three most widely used accelerated methods of depreciation are.

1. Declining-Balance Method

This method utilizes a depreciation rate (expressed as a percentage) that is some multiple of the straight-line method. For example, the double declining rate for a 10-year asset would be 20% (double the straight line rate, which is 10%). The declining-balance rate remains constant and is applied to the reducing book value each year. Unlike other methods, in the declining-balance method the salvage value is not deducted in computing the depreciation base.

The declining-balance rate is multiplied by the book value of the asset is reduced each period. Since the book value of the asset is reduced each period by the depreciation charge, the constant declining-balance rate is applied to a successively lower book value that results in lower depreciation charges each year. This process continues until the book value of the asset is reduced to its estimated salvage value, at which time depreciation is discontinued. As indicated above, various multiples are used in practice, such as twice (200%) the straight-line rate (double-declining-balance method) and 150% of the straight-line rate etc.

To illustrate, assume that Famine Company recently purchased crane for digging purposes. Pertinent data concerning the purchase of the crane are:

Cost of crane.....Br. 500, 000

Estimated Economic life.....5 years

Estimated salvage value.....Br. 50, 000

Productive life in hours.....30, 000 hours.

Using the doubles declining approach the depreciation expense per year is as follow:

	Book value of		Accumulated		Book value
	Asset atb eginningo fyear	Rate	Depn. Expense	Dep	
1	Br. 500, 000	40%	Br. 200, 000	Br. 200, 000	Br. 300, 000
2	300, 000	40%	120, 000	320, 000	180, 000
3	180, 000	40%	72, 000	392, 000	108, 000
4	108, 000	40%	43, 200	435, 200	64, 800
5	64, 800	40%	14, 800	450, 000	50, 000

Limited to Br. 14, 800 because book value should not be less than salvage value.

2. Sum-of-the-years'-Digits Method

This method results in a decreasing depreciation charges based on a decreasing fraction of depreciable cost (original cost less salvage value). Each fraction uses the sum of the years as a denominator and the number of years of estimated life remaining as of the beginning of the year as a numerator. The denominator is calculated as $\frac{n(n+1)}{2}$ where n is the economic life of the asset.

In this method, the numerator decreases year by year although the denominator remains constant. At the end of the asset's useful life, the balance remaining should be equal to the salvage value. Using the data for Famine Company above, the depreciation expense per year is calculated as follows:

Year	Depreciation Base	Remaining life in year	Depreciation Fraction	Depreciation Expense	Book value End of year
1	Br. 450, 000	5	5/15	Br. 150, 000	Br. 350, 000
2	450, 000	4	4/15	120, 000	230, 000
3	450, 000	3	3/15	90, 000	140, 000
4	450, 000	2	2/15	60, 000	80, 000
5	450, 000	1	1/15	30, 000	50, 000

* = EMBED Equation.3 EMBED Equation.3 = 15

N.B The depreciation rate under the sum-of-years'-digits-method should be used for one full year (12 months)

Check Your Progress –2

1. A plant asset Cost Br. 56, 000, had an economic life of 8 years, and an estimated net residual value of Br. 2, 000.

a. Compute depreciation Expense for the first year of economic life under the sum-of-the-years'-digits method of depreciation

b. Assume that this asset was acquired on April 1, 1990. Compute depreciation expense for the full year ended Dec. 31, 1991, under the sum-of-the-years'-digits method of depreciation.

C. Units-of-output method

his method assumes that depreciation is a function of use or productivity instead of the passage of time. The life of the asset is considered in terms of either the output it provides (units it produces), or an input measure such as the number of hours it works. Conceptually, the proper cost association is established in terms of output instead of hours used, but often the output is not easily measurable. In such cases, an input measure such as machine hours is a more appropriate method of measuring the birr amount of depreciation charges for a given accounting period.

For Famine Company above, if the crane is used 4, 000 hours the first year, the depreciation charge is Depreciation expense = EMBED Equation.3 x Hours this year

$$= \text{EMBED Equation.3} \times 4,000 = \text{Br. } 60,000$$

The major limitation of this method is that it is not appropriate in situations in which depreciation is a function of time instead of usage. For example, a building is subject to a great deal of steady deterioration from the elements (time) regardless of its use. In addition, where an asset is subject to economic or functional factors, independent of its use, the units-of-output method loses much of its significance. For example, if a company is expanding rapidly, a particular building may soon become obsolete for its intended purposes (function).

Check Your Progress –3

1. Describe a situation in which the use of the output method of depreciation is appropriate.

D. Special Depreciation Methods

Sometimes an enterprise does not select one of the more popular depreciation methods because the assets involved have unique characteristics, or the nature of the industry dictates that a special depreciation method be adopted. Generally, these systems can be classified into five groups:

I. Inventory methods

The inventory method is used to value small tangible assets such as hand tools or utensils. A tool inventory, for example, might be taken at the beginning and at the end of the year; the value of the beginning inventory plus the cost of tools acquired for the year less the value of the ending inventory provides the amount of depreciation expense for the year. This method is appealing because separate depreciation schedules for the assets in use are impractical.

II. Retirement and Replacement Methods

The retirement and replacement methods are used principally by public utilities and railroads that own many similar units of small value such as poles, conductors, and telephones. The purpose of these approaches is to avoid elaborate depreciation schedules for individual assets. The distinction between the two methods is that the retirement method charges the cost of the retired asset (less salvage value) to depreciation expense; the replacement method charges the cost of units purchased less salvage value from the units replaced to depreciation expense. In the replacement method the original cost (sometimes called aboriginal cost) of the old assets is maintained in the accounts indefinitely.

To illustrate these two methods, let us assume that the transmission lines of DOF Company originally cost Br. 1, 000, 000 and that 8 years later lines costing Br. 150, 000 are replaced with lines having a cost of Br. 200, 000. Any salvage value from the old transmission lines is considered a reduction of the depreciation expense in the period of retirement or replacement under both methods. Neither makes use of an accumulated depreciation account.

Entries under Retirement and Replacement Methods

Retirement method	Replacement method
Installation of lines – 1990	
Plant assets-lines.....1, 000, 000	Plant assets-lines –1, 000, 000
Cash.....1, 000, 000	Cash.....1, 000, 000
Retirement of old asset – 1998	
Depreciation Expense 150, 000	no entry
Plant assets-lines.....150, 000	
Cost of new asset – 1998:	
Plant assets-line.....200, 000	Depreciation Expense – 200, 000
Cash.....200, 000	Cash.....200, 000

III. Group and Composite Method

Depreciation methods are usually applied to a single asset. In certain circumstances, however, multiple-asset accounts are depreciated using one rate. Two methods of depreciating multiple-asset accounts are employed: the group method and the composite method. The term group refers to a collection of assets that are similar in nature; composite refer to a collection of assets that are dissimilar in nature. The group method is frequently used where the assets are fairly homogeneous and have approximately the same useful lives. The composite approach is used when the assets are heterogeneous and have different lives.

The average depreciation or composite rate is determined by dividing the depreciation per year by the total cost of the assets.

IV. Interest method of Depreciation

For many years the annuity and sinking fund methods of depreciation have received attention from accounting theorists because of their focus on cost recovery and rate of return on the investment in depreciable plant assets. A depreciable plant asset represents a bundle of future services to be received periodically over the economic life of the asset. The cost of such an asset may be viewed as the present value of the equal periodic rents (services) discounted at a rate of interest consistent with the risk factors identified with the investment in the plant asset.

- Annuity method

This method is appropriate when the periodic cost (depreciable) of using a long-lived plant asset is considered to be equal to the total of the expired cost of the asset and the implicit interest on the un recovered investment in the asset. Depreciation expense is debited and accumulated depreciation and interest revenue are credited periodically.

- Sinking-Fund Method

This method might be used when a fund is to be accumulated to replace a plant asset at the end of its economic life. Under the sinking-fund method, the amount of annual depreciation expense is equal to the increase in the asset replacement fund. The increase in the fund consists of the equal periodic deposits (rents) plus the interest revenue realized at the assumed rate on the sinking-fund balance.

To illustrate the annuity method and sinking-fund method of depreciation, assume that a trunk with an economic life of five years and a net residual value of Br. 42, 117.50 is acquired for Br. 500, 000 at beginning of year 1.

Assume also that the fair rate of interest for this type of investment is 10% compounded annually.

Required: A) using annuity method

1. Compute the yearly depreciation expense using the annuity method.
2. Prepare a summary of annuity method of depreciation.
3. Present the journal entries to record depreciation at the end of year 1 using the annuity method.

B) Using sinking-fund method

4. Compute the yearly sinking-fund deposit using the sinking fund method of depreciation.
5. Prepare a summary of sinking-fund method of depreciation.
6. Present the journal entries to record depreciation using the sinking-fund method of depreciation for years 1 and 2

Solution:

1. Annual depreciation expense under annuity method.

Depreciation = EMBED Equation.3 = Br. 125, 000

2. Summary of annuity method of depreciation.

Year	Implicit interest Depn. Expense	Credit to Accumulated revenue	Balance of Depn. Account	Carrying accumulated Depn. Account	Truck amount of
	_____	_____	_____	_____	_____
	Br. 500, 000				
1	125, 000	50, 000	Br. 75, 000	Br. 75, 000	425, 000
2	125, 000	42, 500	82, 000	157, 500	342, 500
3	125, 000	34, 250	90, 750	248, 250	251, 750
4	125, 000	25, 175	99, 825	348, 075	151, 750
5	125, 000	15, 192.50			

CHAPTER TWO: CURRENT LIABILITIES AND CONTINGENCIES

Objectives

The objectives of this chapter are to explain the features and accounting of current liabilities and contingencies.

After studying this chapter, you will be able to:

- distinguish between current liabilities and long-term liabilities;
- explain how current liabilities are valued;
- distinguish between definitely measurable liabilities and liabilities dependent on operating results;
- explain circumstances at which contingencies are accrued, disclosed or, neither accrued nor disclosed;
- explain the current liabilities appearance in the financial statements.

2.1 Liabilities

Liabilities, by definition, are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events. The distinction between current liabilities and long-term liabilities is important because it enables to assess the business enterprise's ability to settle its maturing debt. In the following sub-topic of this chapter, we cover in relative detail about current liability and contingency.

The Distinction Between Current Liabilities and Long-term Liabilities

Current liabilities: are obligations for which payment will require

- i. The use of current assets, or
- ii. the creation of other current liabilities

- Current liabilities include payables to suppliers and employees; accruals for taxes, rents; advance collection from customers; obligation that are payable on demand with in one year even though the liquidation may not be expected with in that period.
- Current liabilities do not include those obligation not settled with in one operating cycle; obligations that will be liquidated by the issuance of shares of stock; the creditors lost their right to demand payment.
- The relationship between current assets and current liabilities, and the relationship between cash balance and current liabilities is important because it shows the solvency of the business (i.e. the ability to pay debts as they mature).

Valuation and Recognition of Current Liabilities

In theory, the measure of any liability at the time it is incurred is the present value of the required future cash out flow. In practice, however, most current liabilities are recorded at face amount. The difference between the present value of a current liability and the amount that will be paid at maturity usually is not material because of the short time period involved.

The recognition of liabilities poses two conditions,

- (i) Liabilities include future cash outflow that result from past transactions and events, and
- (ii) Measured with reasonable accuracy.
- (iii) With regard to liabilities two questions always are going to be asked
 - (1) Does the liability exist?
 - (2) If it exists, what is the amount of the obligation?

In some cases of both these questions are definitely answerable. While in other instance there is uncertainty as to the amount. In extreme cases both existence and amount becomes uncertain. The remaining topics of this chapter covers in depth these three cases

Definitely Measurable Liabilities

The amount of an obligation and its due date are known with reasonable certainty because they result from contracts or the operation of statutes. Let's give specific examples with their respective explanations.

A. Trade Accounts Payable

Trade accounts payable resulted from purchases of goods and services on account. There are two ways of recording trade accounts payable,

1) Gross Method: -

Here trade accounts payable are recorded at face amount. The purchases discounts ledger account is credited for discounts taken, and a material amount of discounts available to be taken at the end of an accounting period is accrued by a debit to Allowance for Purchases Discounts (a contra-liability ledger account). In the income statement (specifically in the cost of goods sold section), the purchases discount is deducted from purchases to give net purchases.

2) Net Method: -

In this method purchases is recorded net of discounts at the time of purchases. For discounts not taken (for one reason or another), the Purchases Discounts Lost account is debited. In the income statement, the amount of Purchases Discounts Lost is reported under other Expenses.

Example, assume that the following information is taken from ABC co. For year 6:

- (a) Purchases Br. 1, 000, 000 of merchandise on terms 2/10, n/30
- (b) Paid invoices for purchases of Br. 500, 000 with in the discount period and for purchases of Br. 200, 000 after the discount period
- (c) Estimated at the end of year 6 that 80% of Br. 300, 000 outstanding trade accounts payable would be paid with in the discount period.

Required- Give journal entries and balance sheet presentation related to trade accounts payable using gross method

Solution- (a) Purchases	1, 000, 000
Trade Accounts payable	1, 000, 000
(b) Trade Accounts Payable (500, 000 + 200, 000)	700, 000
Purchased Discounts (500, 000 x 0.02)	10, 000
Cash	690, 000
(c) Allowance for Purchased Discounts (300, 000 x 0.08 x 0.02)	4, 800
Purchases Discounts	4, 800

Excerpt from balance sheet – End of year 6

Trade Accounts Payable (1, 000, 000 – 700, 000)	300, 000
Less: Allowance for purchases Discounts	<u>4, 800</u>
Carrying Amount	<u>295, 200</u>

B. Loan obligations (In the form of promissory notes payable)

- Promissory notes payable as evidence of borrowing is somehow stronger than the accounting for promissory notes payable in the eye of law to be enforced for collection. The accounting for promissory notes payable resembles that of accounting for promissory notes receivable. In this section we concentrate on short-term promissory notes payable (commercial paper is a good example).
- When a promissory note bears a current fair rate of interest, its face amount is equal to its present value at the time of issuance whereas when a promissory note bears no interest or an unreasonably low rate of interest, the present value of the note payable is less than its face amount. The discount of the note is converted to interest expense over the term of the note.
- For example, assume that in November 1, year 9, Jet Co. uses a one-year non interest-bearing note as a consideration for the acquisition of furniture. The face amount of the note is Br. 240, 000 and the current fair rate of interest on the note is 12% compounded monthly (i.e. see the appropriate present value table for 1% (12%/12 months) per period for three decimal places).

Required (i) The journal entries for the month of November and December

(ii) The presentation of the note in unity balance sheet on Dec. 31, year 9, the end of the fiscal period

Solution (i) – Nov. 1 Furniture ($240,000 \times 12\% = 240,000 \times 0.887$)	212,880
Discount on Notes payable	27,120
Notes payable	240,000
Nov. 30 Interest Expenses ($240,000 - 27,120 \times 0.12 \times 1/12$)	2,129
Discount on Notes payable	2,129
Dec. 31 Interest Expense ($240,000 - 27,120 + 2,129 \times 0.12 \times 1/12$)	2,150
Discount on Notes payable	2,150

(ii) Excerpt from the balance sheet

Notes payable	Br. 240,000
Discount on Notes payable ($27,120 - 2,129 - 2,150$)	<u>22,841</u>
Carrying Amount of the note	Br. <u>217,159</u>

Note – In year 10, the note goes for additional 10 months, at the end of each month the Discount on notes payable is transferred to interest expenses.

C. Refinancing of Short –Term Debt

Refinancing means replacing short-term debt with long-term either debt or equity securities, or replacing the short-term debt with other short-term debt for more than one operating cycle from the date of the balance sheet.

Does the short-term debt expected to be refinanced on long-term basis classified as current liabilities?

- Accounting standard requires that a short term debt be classified as current liabilities unless the enterprise demonstrates both the following things:

(1) Intentions to refinance the debt on long-term basis, and

(2) Ability to carry out the refinancing

- Ability to refinance on long-term basis must be demonstrated either by
 - (a) Actually issuing long-term debt or equity securities to replace short-term debt, or
 - (b) Entered in to a contract to replace short-term debt at maturity.

When a short-term debt is not classified under current liability, the reason should have to be disclosed in the note to the financial statements. The specific disclosures required include the description of the refinancing contract, the terms of any new debt incurred, and the terms of any new equity securities issued.

D. Cash Dividends

When board of directors declares a cash dividend, the corporation incurs a legal obligation to pay the dividend on a specified date. Because of short-duration between cash dividend declaration and payment, it is a current liability. Unless dividends in arrears on cumulative preferred stock are declared by the board, they are not liabilities but disclosed in the note to the financial statements. Undistributed stock dividends are reported in the stockholders' equity section, not as current liability because no cash outlay is required (i.e. specifically on stock dividends to be distributed ledger account).

Accrued Liabilities

Accrued liabilities /accrued expenses is an obligation that come into existence as a result of past contractual commitments. To explain this topic, let us discuss accrued salary and property taxes.

Accrued Salary – As you have learned in the previous accounting courses (or principles of accounting II for degree students), there are various deductions to calculate the liability for take home pay. Some of the deductions include pension contribution, income taxes withhold, contribution for labor union, penalties, etc. Here simply to give hypothetical journal entry.

Salaries Expenses	xxx	
Payroll Taxes Expenses	xx	
Taxes payable		xx
Liability for income Taxes withhold		xx
Hospital insurance premium payable		xx
Accrued payroll	xxx	

Note that the calculation of various taxes differ from country to country according to their legislation. The accrued payroll shows the take home pay, which is accumulated, and going to be paid in relatively short-period of time.

Property Taxes – are sources of revenue for the government. There are two accounting issues, which arise relating to property taxes:

- i) When should the liability for property taxes be recorded?

The answer to this question can be seen from two different perspectives. On the one hand, because the legal liability for property taxes arises on the lien date, the liability may be recorded on that date. On the other hand, the AICPA took the position that accrual of property taxes during the fiscal year of the taxing units instead of recognizing the whole liability on the lien date. The latter approach is advocated in this text.

- a. To which accounting period does the tax expense relate?

Because property taxes are expenses associated with the use of property during the fiscal year of the taxing units, it seems reasonable to expense the property taxes during that period (instead of expensing it all on the lien date)

Fore example, assume that LG plan assets are subject to property taxes by Region 14 taxing units. The fiscal year of Region 14 taxing units, cover the period from April 1 to March 31. The property tax Br. 108, 000 are assessed on January 10, year 5, covering the fiscal year starting on April 1, year 5. The lien date is April 1, year 5, and taxes are payable in two installments of Br. 54, 000 each on July 15, year 5, and on November 15, year 5. Assuming LG accrues property taxes on monthly basis, the following journal entries are passed using AICPA recommendations.

* April 1 – lien date (i.e. the date at which

liability comes in to existence)

No journal entry required

* At the end of April, May, June, year 5,

Property Taxes Expenses (108, 000/2)

9, 000

recording of monthly property taxes expense

property Taxes payable

9, 000

* July 15, year 5, payment of the first installment

Property Taxes payable (3 x 9, 000)

27, 000

of tax bills

prepaid property taxes (3. 9, 000) 27, 000

Cash 54, 000

Liabilities Dependent on Operating Results

Certain obligations are computed, by their nature, based on operating results. At the end of the year, the operating results are known, therefore, there is no problem of determining such liabilities.

The problem arises in determining such obligation for interim reporting purposes. Obligations dependent on operating results include bonuses, income taxes, royalties, etc.

Income Taxes

Business enterprises based on the number of owners, are classified into single proprietorship, partnerships and corporations. The first two, namely single proprietorship and partnership, are not taxable entities and therefore do not report income tax liabilities in their balance sheets. However, corporation is a taxable entity and income tax liabilities appear in the balance sheet of such entities. Corporations usually are required to make payments of their estimated tax liabilities in advance. The remaining tax not covered by the estimated payment is payable by the due date of the income tax return.

The journal entries if the tax is paid in advance,

At the time of payment □ **prepaid income taxes**

xxx

Cash

xxx

When it expires	<input type="checkbox"/> Income taxes expense	xxx
	Prepaid income taxes	xxx

The journal entries, if the income tax is accrued

Adjustment for the accrued tax	<input type="checkbox"/> Income taxes expense	xxx
	Income Taxes payable	xxx
At the time of paying the debt	<input type="checkbox"/> Income taxes payable	xxx
	Cash	xxx

Bonus

Some contract calls for conditional payments in an amount dependent on revenue/sale or income (after deduction of expenses). For example, royalties payment that is 20% of sales; rents which is composed of a fixed Br. 2, 000 a month and 1% of sales; employee compensation based on 10% income in excess of Br. 500, 000

When a bonus plan is based on income, there is a difficulty of determining which expenses are going to be deducted. There could be three different assumptions, applying the bonus percentage on:

- (1) income before income taxes and bonus
- (2) income after bonus but before income taxes
- (3) net income (i.e. income after bonus and income taxes)

For example, assume that ABC co. has a bonus plan under which marketing staff receives 25% of the income over Br. 35, 000 earned by the business. Income for the business amounted to Br. 95, 000 before the bonus and income taxes. The income tax rate is assumed 35%. Calculate the bonus expenses for ABC co. under each of the following assumptions.

Assumption 1 – Bonus is calculated based on income before income taxes and bonus

$$\text{Bonus} = 0.25 (95, 000 - 35, 000) = \text{Br. } 15, 000$$

Assumption 2 – Bonus is calculated based on income after bonus but before income taxes Let B refers to bonus

$$\text{Bonus} = 0.25 (95, 000 - 35, 000 - B)$$

$$B = 15,000 - 0.25 B \quad \square \quad B = \text{Br. } 12,000$$

Assumption 3 – Bonus is calculated based on income after bonus and income taxes

Let B refers to bonus

T refers to income taxes

$$B = 0.25 (95,000 - 35,000 - B - T) \quad \square \quad B = 15,000 - 0.25B - 0.25T \dots (1)$$

$$T = 0.35 (95,000 - B) \quad \square \quad T = 33,250 - 0.35 B \dots (2)$$

Substituting (2) in (1),

$$B = 15,000 - 0.25 B - 0.25 (33,250 - 0.35 B)$$

$$\square B = 15,000 - 0.25 B - 8312.5 + 0.0875 B$$

$$\square 1.1625 B = 6,687.5$$

$$\square B = 5752.69 \text{ (Rounded to two decimal places)}$$

Note that the journal entry in all three cases is

Bonus Expense	xxx
Bonus payable	xxx

Bonus expense is an operating expense, therefore it's tax deductible. Bonus payable is reported as current liability in the balance sheet.

3.2 Contingent Liabilities

Contingency is uncertainty as to possible gain (gain contingency) or loss (loss contingency) to a business enterprise that ultimately will be resolved when a future event occurs or fails to occur. When uncertainty surrounding a gain contingency resolved, it may result in an acquisition of an asset or the reduction of liability. When uncertainty surrounding a lose contingency is resolved, it may result in reduction of an asset or the incurrence of a liability.

What is the difference between potential liabilities from loss contingencies and estimated liabilities?

Clarifying this point is very important in understanding this topic. The preparation of financial statements requires estimates for many business activities, and the use of estimates does not necessarily mean that a contingency exists. As an example, computing depreciation of plant

assets is certain, what is the uncertain (therefore going to be estimated) is the periodic amounts of depreciation expense. To be loss contingency, it should have to be uncertain as to even its existence not merely its amounts. Therefore, not all uncertainties inherent in the accounting process give rise to contingencies.

Which contingencies require accrual in the accounting records, which contingencies require disclosure in a note to the financial statements, and which general risk contingencies require neither accrual nor disclosure?

As you recall in contingency there is uncertainty, which is going to be resolved in the occurrence of certain events. There are three levels in the expectation of recurrence of future events, which in turn dictates their treatment – accrual, disclosure, or neither of them. Future events may be:

- (i) Probable- likely to occur
- (ii) Reasonably possible-more than remote but less than likely, or
- (iii) Remote – slight chance of occurring

Loss Contingencies

There is uncertainty as to the existence and amounts of loss to be incurred. Examples include

- Collectibility of receivable (i.e. loss as a result of failing to collect)
- Liabilities for product warranties
- Risk of damage to property by fire
- Pending or threatened litigation
- Selling of receivable or other assets through recourse
- To explain their accounting treatment, scrutinize the following table:

Probability as to the existence of loss contingency	Contingency can be reasonably estimated	Contingency cannot be Reasonably estimated
(1) Probable	Accrued & included in the financial statements	Not accrued but reported in a note to the financial statements
(2) Reasonably Possible	Not accrued, but reported in a note to the financial statements	Not accrued, but reported in a note to the financial statements
(3) Remote	Not accrued, a note to the financial statements is permitted but not required	Not accrued, a note to the financial statements is permitted but not required

☐ Accrual of loss contingencies

As can be seen and implied from the above table, a loss contingency is accrued

- (a) Only when it is probable that an asset has been impaired or a liability incurred
- (b) The amount of the loss can be reasonably estimated, and
- (c) It must be probable that a future event will confirm the existence of the loss

You should have to note that a mere exposure to risk does not require accrual of a loss. For example, the possibility that injury claims will be made against a business enterprise doesn't indicate that an asset has been impaired or that a liability has been incurred, therefore, it is not going to be accrued.

In some instances, it is difficult to give single amount estimate for the loss contingency. Instead, a range of loss can be reasonable estimated. With in the range no single amount appears to be a better estimate than any other amount. The minimum account in the range should be accrued, and any additional possible loss is disclosed in the note to the financial statements. To illustrate, assume that TG Company had a lawsuit on the balance sheet date but the amount of the damage has not been yet decided. A reasonable estimate of the compensation is between Br. 300, 000 and Br. 700, 000, no amount in between is a better

estimate than any other is. TG Company records this as follows:

Litigation Loss	300, 000
Liability from litigation	300, 000

The Company also discloses the additional Br. 400, 000 (i.e. Br. 700, 000 – Br. 300, 000) in the note to the financial statements.

Now let us add examples of accruable loss contingency with their accounting treatment wherever practical.

Gift Certificates – are sold by retail stores to provide merchandise on some later date. The amount of liability is equal to the amount advanced by customers. As redemptions are made, the liability ledger account is debited and a revenue account is credited.

Service Contracts – Household appliances like refrigerator, TV, etc. are sold with their associated servicing contracts for a specified period of time. The amounts received for such service contracts constitute unearned revenue that will be earned by performance over the term of the contract. The actual costs of servicing will be recognized as expenses.

For example, Dire Sets refrigerator service contracts for Br. 200 each on July 1 year 3. Assume 500 such service contracts are sold and agreeing to service the refrigerator for one year 50% of the contract revenue is recognized until December 31, of year 3, which is the end of the fiscal period. Cost of Br. 20, 000 is incurred in servicing the contracts in this period. The remaining will be serviced in the coming fiscal period.

July 1. Cash (Br. 200 x 500)	100, 000	
Unearned Service Contract Revenue		100, 000
Dec. 31. Unearned Service contract Revenue (100, 000 x 0.5)	50, 000	
Service Contract Revenue		50, 000
Service contract expenses	20, 000	
Inventory, cash, Accrued payroll, etc		20, 000

Product Warranties – Most business enterprises give warranties to replace or repair a product if it proves unsatisfactory during some specified time period. Estimating the liability under

product warranty is a very difficult task. There are two alternative ways of recording such liability.

(1) Recording it at the time of sale

(a) Estimated liability at the time of sale

Product warranty expense	xxx
Liability under product warranty	xxx

(b) Recording actual costs of servicing customer claims

Liability under product warranty	xx
Cash (or Accounts payable, inventories, etc)	xx

(2) Not recording it at the time of sale

(a) Estimated liability at the time of sale

No entry

(b) Recording actual costs of servicing customer claims

Product warranty expense	xxx
Cash (or Accts payable, inventories, etc)	xxx

(c) Potential claims outstanding are recorded at the end of the accounting period

Product warranty expense	xx
Liability under product warranty	xx

Coupons – for promotional purposes, coupon is issued which is exchangeable for prizes such as cash or merchandise. The liability for the issuer is the cost of the prizes that are expected to be claimed by customers.

For example, assume that in year 5 ABC co. issued coupons that may be redeemed for prizes costing Br. 5, 000 if all coupons are presented for redemption. Experience indicate only 90% of the coupon is presented for redemption, therefore the liability is Be. 4, 500 (i.e. Br. 5, 000 x 0.9).

- A merchandise for Br. 5, 900 is bought as a prize

Inventory of prize merchandise	5, 900
Cash (or Accts payable)	5, 900

- ABC co. customers present coupons during year 5 in exchange for prize merchandise costing

Br. 3, 200

Promotional expenses	3, 200
Inventory of prize of merchandise	3, 200

- Adjusting entry for the coupons outstanding (at the end of year 5)

Promotional expenses (4, 500 – 3, 200)	1, 300
Liability for coupons outstanding	1, 300

At the end of year 5, in the current asset, the inventory of prize of merchandise of Br. 2, 700 (5, 900 – 3, 200) is reported. And in the current liability, a liability for coupons outstanding of Br. 1, 300 is reported. In the income statement a promotional expense of Br. 4, 500 is reported.

- Loss contingencies that are not accrued

Loss contingencies that do not meet the criteria for accrual, but which are at least reasonably possible as to their existence, are disclosed in the note to the financial statements. The disclosure should indicate the nature of the contingency and provide an estimate of possible loss, or state that such all estimates cannot be made. An example of such a loss contingency is a legal action whose unfavorable outcome is reasonably possible, but a reasonable estimate of loss cannot be made. Disclosure may not be required for a loss contingency involving law suits not yet filed, unless it appears probable that the lawsuit will be filed and that an unfavorable outcome is reasonably possible.

For loss contingency, which are remote as to their existence, disclosure may still be permitted, but not required. Such contingencies include guarantees of indebtedness of others and agreements to reacquire receivables that had been sold.

GAIN CONTINGENCIES – as to the accounting treatments of gain contingencies, the following table gives you important information

Probability that contingency exists	Contingency can be reasonably estimated	Contingency cannot be reasonably estimated
(1) Probable	Note accrued, except in unusual situations; disclosure in a note to the financial statements is required	Not accrued but reported in a note to the financial statements in a manner that does not give an impression gain is likely
(2) Reasonably Possible	Not accrued, but reported in a note to the financial statements in a manner that does not give an impression that realization of gain is likely	Not accrued, but reported in a note to the financial statements in a manner that doesn't give an impression realization of gain is likely
(3) Remote	No disclosure required	No disclosure required

Because of conservatism, Contingencies that might result in gains are recorded until the gains are realized or realizable. Examples of gain contingencies include probable favorable outcome of litigation and potential future income tax benefits of operating loss carry forwards.

Presentation of Liabilities in the Financial Statements

Two questions arise in connection to the presentation of current liabilities in the balance sheet.

What is the basis of ordering current liabilities?

Current liabilities may be reported in the order of maturity or according to amount (largest to smallest). These two bases can't be achieved together, and the compromise is to rank current liabilities in order of amount (largest to smallest), unless differences in maturity dates are significant (those maturing shortly after the balance sheet date comes first).

What is the extent of disclosure required for different types of current liabilities?

The extent of disclosure depends on the purpose for which the balance sheet is prepared. The liabilities for presentation in annual reports is not as detailed as that prepared for short-term loan application.

Activity Questions

Activity –1

Give journal entries and balance sheet presentation related to trade accounts payable using net method for the example given above.

Summary

Current liabilities are obligations for which payment will require the use of current assets or the creation of other current liabilities in one year or one operating cycle, if longer.

Certain liabilities are definitely measurable as to their amounts and existence. While others are dependant on the operating results of the business enterprise to determine the amounts of the liability such as bonus payable. In other extreme, some other liabilities are uncertain as to their existence and amounts, such liabilities are known as contingent liabilities.

Answers to Activity Questions

1. a) Purchases (1, 000, 000 x 0.98)	980, 000	
Trade Accounts payable		980, 000
b) Trade Accounts payable (700, 000 x 0.98)	686, 000	
Purchases Discounts Lost (200, 000 x 0.02)	4, 000	
Cash		690, 000
c) Purchase Discounts Lost (300, 000 x 0.2 x 0.02)	1, 200	
Trade Accounts Payable		1, 200

Note – If 80% is estimated to be paid with in the discount period, the remaining 20% is paid after the discount period.

CHAPTER THREE: ACCOUNTING FOR LONG-TERM DEBT

INTRODUCTION

Assume that a certain company wants to obtain large amount of funds to support expansion. Dear Colleague, do you know what kind of mechanism does the company use to get this much money? You may suggest that the company uses either its earnings or shareholders' investment (stock financing). Companies also issue bonds - long-term debt - to finance their capital.

Long-term debt plays an important role today in our capital markets because companies and governments need large amounts of capital to finance their growth. In many cases, the most effective way to obtain the capital is through the issuance of long-term debt. The purpose of this chapter is to address the basic issues surrounding long-term debt accounting.

Learning Objectives

Upon completion of this chapter, you will be able to:

- Understand the nature of bonds and how to compute the price of a bond at issuance.
- Identify various types of bond issues
- Apply the methods of bond discount and premium amortization.
- Describe the accounting procedures for the extinguishment of debt.
- Describe troubled debt restructurings
- Indicate how long-term debt is presented and analyzed

3.1. CHARACTERISTICS AND VALUATION OF LONG-TERM DEBT

Long-term debt consists of probable future sacrifices of economic benefits arising from present obligations that are not payable within a year or the operating cycle of the business, whichever is longer. Bonds payable, long-term notes payable, mortgages payable, pension liabilities, and lease liabilities are examples of long-term debt.

Debt capital is an attractive means of financing for the debtor. Creditors do not acquire voting privileges in the debtor company, and debt issuance causes no ownership dilution. Debt capital is obtained more easily than equity capital for many new and risky firms. Interest expense, unlike dividends, is tax-deductible. Furthermore, a firm that earns a return on borrowed funds that

exceeds the rate it must pay in interest is using debt to its advantage and is said to be successfully leveraged.

Debt financing often supplies the capital for expansion and takeover activities when issuance of new stock is difficult. The potential increase in profits from expansion can be sufficiently attractive to induce firms that traditionally avoid debt to decrease liability levels.

However, leverage is dangerous if sales or earnings decline and interest expense becomes an increasing percentage of earnings. Business failures are frequently caused by incurring too much debt in expectation of high sales and profits. Such firms often attempt to restructure their debt by extending maturity dates or requesting a reduction in principal or interest.

Incurring long-term debt is often accompanied by considerable formality. For example, the bylaws of corporations usually require approval by the board of directors and the stockholders before bonds can be issued or other long-term debt arrangements can be contracted.

Debt agreements often restrict the operations and financial structure of the borrower to reduce the risk of default. Restrictions include ceilings on dividends and future debt, the maintenance of specific income and liquidity levels, and the establishment of sinking funds that will be available to extinguish the debt. A sinking fund is a cash fund restricted for a specific purpose and classified as an investment violation of the restrictions places the debtor in technical default, meaning that the debt is due at the creditor's discretion.

Debt is an attractive investment for creditors by providing legally enforceable debt payments, eventual return of principal, and a prior claim to assets up on corporate liquidation. Although debt investments provide, on average, a lower overall return than do equity investments, they are generally less risky. Debt securities with claims on specific assets further reduce the risk.

Valuation of long-term debt

Three general principles are followed in measuring and recording most long-term debts and interest expense;

1. Long-term debts are recorded at the fair value of the goods or services obtained by incurring debt. The market rate of interest is the rate implicit in the transaction and equates the present value of the required future cash payments to the fair value of goods and services. If the fair value of goods and services cannot be determined, the liability is recorded at the present value or required future cash payments discounted at the market interest rate for similar debt instruments.
2. Periodic interest expense is based on the market interest rate on the date of debt issuance and the debt balance at the beginning of the reporting period.
3. The book value of long-term debt at a balance sheet date is the present value of all remaining cash payments required, discounted at the market interest rate at issuance. The rate of interest used for this purpose is not changed during the term of the debt.

? Do you know the difference between long-term debt and short-term debt? Explain

3.2. BONDS PAYABLE

3.2.1. Issuing bonds

Bonds are the most common type of long-term debt reported on a company's balance sheet. The main purpose of bonds is to borrow for the long-term when the amount of capital needed is too large for one lender to supply. By using bonds in \$100, \$1,000 or \$10,000 denominations, a large amount of long-term indebtedness can be divided in to many small investing units, thus enabling more than one lender to participate in the loan.

A bond arises from a contract known as a **bond indenture** and represents a promise to pay: (1) a sum of money at a designated maturity date, plus (2) periodic interest at a specified rate on the maturity amount (face value). Individual bonds are evidenced by a paper certificate and typically have a \$1,000 face value. Bond interest payments usually are made semiannually, although the interest rate is generally expressed as an annual rate.

An entire bond issue may be sold to an investment banker who acts as a selling agent in the process of marketing the bonds. In such arrangements, investment bankers may either underwrite the

entire issue by guaranteeing a certain sum to the corporation, thus taking the risk of selling the bonds for whatever price they can get (firm underwriting), or they may sell the bond issue for a commission to be deducted from the proceeds of the sale (best efforts underwriting). Alternatively, the issuing company may choose to place privately a bond issue by selling the bonds directly to a large institution, financial or otherwise, without the aid of an underwriter (private placement).

3.2.2. Classification of Bonds

Investors have a wide variety of investment goals, preferences, and policies. As a result, many different types of bonds are issued. Bonds may be classified by:

1. Issuing entity

- a) Industrial bonds: Issued by private for-profit companies.
- b) Municipal bonds: Issued by governmental entities.

2. Collateral

- a) Secured bonds: Supported by a lien on specific assets; bond holders have first claim on the proceeds from sale of secured assets.
- b) Debenture bonds; Unsecured; backed only by issuer's Credit; upon bankruptcy of issuer, bondholders become general creditors for distribution of issuer's assets.

3. Purpose of issue

- a) Purchase money bonds; issued in full or part payment for property
- b) Refunding bonds: issued to retire existing bonds
- c) Consolidated bonds: issued to replace several existing issues.

4. Payment of interest

- a) Ordinarily (term) bonds: provide cash interest at a stated rate.
- b) Income bonds: interest is dependent on issuer's income.
- c) Registered bonds; pay interest only to the person in whose name the

bond is recorded or registered.

- d) **Coupon bonds:** pay interest up on receipt of coupons detached from bonds.

5. Maturity

- a) Ordinary (term) bonds: mature on a single specified date
- b) Serial bonds: mature on several installment dates.
- c) Callable bonds: issuer can retire bonds before maturity date.
- d) Redeemable bonds: bondholder can compel early redemption.
- e) Convertible bonds: bondholder can convert bonds to equity securities of the issuer.

? What are the kinds of promises made in the bond indenture?

3.2.3. Valuation of Bonds payable

Bond Features: Several bond features affect accounting for bonds. To illustrate, assume that late in 2000, ABC Company plans to issue \$100,000 of 10 percent term bonds dated January 1, 2001. Each bond has a \$1,000 face value. The bonds mature December 31, 2010, and pay interest on June 30 and December 31. Five features specified in the bond indenture do not change:

1. The face (maturity, principal, par) value of a bond is the amount payable when the bond is due (\$1,000 per each bond for ABC).
2. The maturity date is the end of the bond term and the due date for the face value (December 31, 2010, for ABC). The length of the bond term reflects the issuer's long-term cash needs, the purpose for which the funds will be used, and the issuer's expected ability to pay principal and interest.

3. The stated (coupon, nominal, contractual) interest rate is the rate that determines periodic interest payments (10% for ABC). This rate is normally set to approximate the rate of interest on bonds of a similar risk class.
4. The interest payment dates are the dates the periodic interest payments are due (June 30 and December 31 for ABC). Semiannual interest payments are common. ABC pays \$50 interest on these dates for each bond ($.10 \times \$1,000 \times \frac{1}{2}$), regardless of the issue price or market rate of interest at date of issue.
5. The bond (authorization) date is the earliest date the bond can be issued and represents the planned issuance date of the bond issue (January 1, 2001, for ABC)
Two other features necessary for valuation are dependent on market factors:
6. The market (effective, yield) interest rate is the true compounded rate that equates the price of the bond issue to the present value of the interest payments and face value. This rate is not necessarily the same as the stated rate. The market interest rate depends on several interrelated factors, including the general rate of interest in the economy, the perceived risk of the bond issue, yields on bonds of similar risk, inflation expectations, the overall supply of and demand for bonds, and the bond term. (Assume that this rate is 12 percent for the ABC issue.)
7. The bond issue date is the date the bonds are actually sold to investors. Bonds often are issued after the bond authorization date. (Assume that the issue date is July 1, 2001 for the ABC issue.) When issuing bonds takes more time than expected, the bonds may be issued after the bond authorization date. The process includes registration with the SEC, negotiations with underwriters, and printing. Changes within the firm and in the economy can pose difficulties in marketing bonds. The issuing company also may delay issuance to take advantage of declining interest rates.

$$\text{Semiannual interest payment} = \left(\frac{.10}{2} \right) \$100,000 = \$5,000$$

Bond	Issue	1 st Interest	2 nd Interest	18 th Interest	Maturity and 19 th (last) Interest payment
Date	Date	Payment	Payment	Payment	Payment
	Issue price	\$5,000	\$5,000	\$5,000	\$5,000
	Paid by investors				+

Payments to bondholders over the bond term:

Cash interest payments: 19(\$5,000)\$ 95,000

Face value 100,00

Total payments to bondholders\$195,000

Exhibit.2 .1 ABC Company bond issue

Bond price: the issue price of a bond depends on the relationship between the market and stated interest rates. The two rates are frequently different at issuance. There are three situations:

1. **Market rate = Stated rate.** Here, the interest payments at the stated rate yield a return equal to the market rate for bonds of similar term and risk. The bonds sell at face value.
2. **Market rate > Stated rate.** Here, the issue price must decline below face value to yield the investor a return equal to the market rate. The difference between face value and issue price is called discount on bonds payable.

ABC company bonds sold at a discount because the market rate (12 percent) exceeds the stated rate (10 percent). Investors are unwilling to pay the \$1,000 face value (a price that yields 10%) because competing debt securities of the same grade yield 12 percent.

3. **Market rate < Stated rate.** Here the issue price rises above face value until the yield decreases to the market rate. The excess above face value paid by the investor is called premium on bonds payable.

Investors pay a price above face value because the stated rate exceeds the interest rate demanded by the market for similar grade bonds. In order for the ABC bonds to yield 8 percent, an investor must pay more than \$1,000 for each bond. The investor receives interest at 10 percent per year, or \$100 per bond, which yields less than 10 percent on the investment if the price for the bond exceeds \$1,000.

The terms discount and premium do not imply negative or positive qualities of the bond issue. They merely describe adjustments to the selling price to bring the yield rate in line with the market rate on similar bonds.

A bond entitles the investor to two different types of cash flows: *principal* and *interest*.

The price of a bond issue equals the present value of these payments discounted at the market rate of interest:

ABC bonds:

Present value of principal

$$\left[PV = \frac{FV}{(1+i)^n}, PV_{100,000} = \frac{\$100,000}{(1+6\%)^{19}} \right] \dots\dots\dots \$33,051$$

Present value of interest payments

$$\left[PV = R \left(\frac{1 - (1+i)^{-n}}{i} \right), PV_{5,000} = 5,000 \left(\frac{1 - (1+6\%)^{-19}}{6\%} \right) \right] \dots\dots\dots \underline{\underline{55,791}}$$

Price of ABC bonds, July 1, 2001 \$88,842

Discount on bonds (\$100,000 -\$88,842) \$11,158

* Present value formula

** Present value formula for ordinary annuity

Investors who purchase the ABC bonds (at a discount) and hold them for the entire term earn 6 percent compounded semiannually on their original investment of \$88,542. As shown in Exhibit 2-1, the investors will receive \$195,000 from ABC over the bond term in return for their \$88,842 investment. The investment yields an annual return of 12 percent.

Accrued Interest: Bond prices exclude accrued interest but the proceeds on bonds sold between interest dates include accrued interest at the stated rate since the last interest date.

Example. If ABC Co. bonds were to sell on August 1, 2001 at 90 percent of face value, total proceeds would be:

Price 90% (\$100,000)	\$90,000
Accrued interest from July/1/01	
10% (\$100,000) (1÷12)	<u>833</u>
Bond proceeds	<u>\$90,833</u>

An investor who purchases the bonds on August 1 and holds the bonds five months to December 31 earns only five months' interest. Yet the investor receives six months' worth of interest on December 31. Therefore, the investor must pay one month of interest at purchase. This system facilitates the trading of bonds and ensures that each bondholder ultimately receives interest for the period he or she holds the bonds.

After Issuance: Bond prices and interest rate changes are inversely related. If the general rate of interest in the economy decreases, all bonds on the market become relatively more attractive, and vice versa.

Example: ABC company bonds were sold to yield 12%. If the market interest rate on bonds similar to ABC's falls to 10%, the price of an ABC bond on the market will increase to \$1,000 because they pay 10 percent interest.

Firm-specific factors such as changes in income, financial position, and risk also affect bond prices. When firms release a disappointing earnings announcement, for example, the price of their bonds may decline due to a perception of increased risk.

Quoted Bond prices: bond prices quoted as a percentage of face value to accommodate all denominations. A \$1,000 bond quoted at 97 sells for \$970 ($.97 \times \$1,000$).

Although issuers usually attempt to set bond rates close to the expected market rate at issuance (minimizing the discount or premium), deep discount bonds and zero coupon bonds are exceptions. *Deep discount bonds* sell for a small fraction of the face value because the stated interest rate is much lower than the market rate. *Zero coupon* bonds provide no separate interest payments. The investor receives only one payment: face value at maturity.

Example: If ABC Co. bonds were zero coupon bonds and were sold to yield 12 percent, the issue price would be \$33,051, the present value of the maturity amount.

Deep discount bonds and zeros are issued for a variety of reasons. Issuing companies find the reduced or non-existent interest payments attractive. The issue price is small relative to face value, attracting investors, zeros, and all bonds issued at a discount, generally increase in value each year as they approach maturity. For zeros, issuers can deduct this annual increase as interest expense even though no interest is paid. Although the annual increase in value of a zero is taxable, some investors can structure their investment to defer taxes until maturity (for example, through an individual retirement account). When so structured, zeros are popular investment for parents wishing to save for their children's college education. Pension funds, which do not pay taxes, also find these investments attractive.

Activity- 1

1. How does a premium on bonds payable occur? What does it represent?

2. How does a discount on bonds payable occur? What does it represent?

You can compare your answer for activity 1 with the following

1. Premium on bonds payable occur when market rate of interest is less than stated rate, and it represents a higher price of bond above face value.
2. Discount on bonds payable occur when market rate of interest is greater than stated rate, and it represents lower price of bond below face value

2.2.4 Fundamental Bond Accounting principles

To demonstrate accounting for bonds, several cases illustrate different reporting situations. In these situations, bonds are issued on the bond date and at the beginning of the fiscal year.

Three different effective (market) interest rates are illustrated.

Common Information: *Bonds issued on bond date, the beginning of fiscal year.* On January 1, 2001, XYZ Company, a calendar year firm, issues \$100,000 of 7 percent term bonds dated January 1, 2001, which pay interest each December 31. The bonds mature on December 31, 2005.

Situation A: effective interest rate = 7 percent

Situation B: effective interest rate = 6 percent

Situation C: effective interest rate = 8 percent

Situation A: Bonds sell at face value, market and stated rate = 7%

$$\begin{aligned}\text{Price} &= \left(PV_{100,000} = \frac{FV}{(1+i)^n} \right) + \left(PV_{7000 \text{ annuity}^*} = R \left(\frac{1-(1+i)^{-n}}{i} \right) \right) \\ &= \left(\frac{\$100,000}{(1+7\%)^5} \right) + \left(\$7000 \left(\frac{1-(1+7\%)^{-5}}{7\%} \right) \right) \\ &= \$71,299 + \$28,701 = \underline{\underline{\$100,000}}\end{aligned}$$

$$* \$100,000 \times 0.07 = \$7,000$$

When a bond is issued, the issuer records the maturity value of the bond in bonds payable, a long-term liability account. In this case, the maturity value equals the amount paid by the bondholders. XYZ makes the following entries during the bond term:

January 1, 2001 – *Issue bonds:*

Cash	100,000
Bonds payable	100,000

December 31, 2001-2005 - *Interest payment:*

Interest Expense	7,000
Cash (\$100,000× .07)	7, 000

December 31, 2005 – *Bond maturity*

Bonds payable	100,000
Cash.....	100,000

Interest expense for bonds issued at face value equals the amount of the interest payment. The book value of the bonds remains \$100,000 to maturity. Subsequent changes in the market rate of interest are ignored for journal entry purposes. Matured bonds are canceled to prevent re issuance

Situation B: Bonds sell at a premium, market rate = 6 percent

$$\begin{aligned}\text{Price} &= \left(\frac{\$100,000}{(1 + 6\%)^5} \right) + \left(\$7,000 \left(\frac{1 - (1 + 6\%)^{-5}}{6\%} \right) \right) \\ &= \$74,726 + \$29,487 = \$104,213\end{aligned}$$

The bonds sell at a premium because they pay a stated rate that exceeds the yield rate on similar bonds. The initial \$4,213 premium is recorded in *premium on bonds payable*, an adjunct valuation account which increases the net bond liability (an adjunct account has an effect opposite to that of a *contra account*). The present value (which equals book value) at issue date (\$104,213) is the amount that, if invested by the issuing company at the effective interest rate, satisfies all payments

required on the bond issue, including the face value. The following entry is made to record the issue:

January 1, 2001 – *Issue bonds*:

Cash	104, 213
Bonds payable	100,000
Premium on bonds payable	4,213

Total interest expense over the term of a bond issue equals total cash payments required by the bond (face value and interest) less the aggregate issue price. Total interest expense is not equal to total cash interest when a bond is sold at a premium or discount, as shown for XYZ Company (situation B):

Face value	\$100,000
Total cash interest .07 (\$100,000) (5 years)	<u>35, 000</u>
Total cash payments required by bond	135,000
Issue price	<u>104,213</u>
Total interest expense for bond term	<u>\$30,787</u>

XYZ Company received \$4,213 more than face value at issuance but will pay only face value at maturity. Therefore, the effective rate is less than the stated rate, and total interest expense for XYZ over the bond term is less than total interest paid.

Subsequent to issuance, the premium or discount is completely amortized over the bond term so that net book value equals face value at maturity. Amortized premium reduces periodic interest expense relative to interest paid, and amortized discount increases interest expenses. The net bond liability equals face value plus the remaining unamortized bond premium or less the remaining unamortized bond discount.

Amortization Method: is a method of accounting for debt securities in which long-term investments are recorded at cost and interest income is recognized with appropriate amortization

of premium or discount. Two methods of amortizing bond premium and discount are available: the **interest method** and the **straight-line method**. Interest method of amortization is the assignment of interest to each interest period in accordance with the principles of compound interest. Straight-line interest amortization is the assignment of an equal amount of interest to each interest period. The following entries illustrate application of the two methods to the XYZ company bonds:

	<i>Interest method</i>	<i>Straight-line method</i>
December 31, 2001:		
Interest expense	6,253*	6,157
Premium on bonds payable	747	843**
Cash (\$100,000×7%)	7,000	7,000

* \$104,213 (6%)

** \$4,213 ÷ 5 years

December 31, 2001:

Interest expense	6,208***	6,157
Premium on bonds payable	792	843
Cash (\$100,000×7%)	7,000	7,000

*** (\$104, 213 -\$747) (0.06)

Under the interest method, the bonds are disclosed in the long-term liability section of XYZ's December 31, 2002, balance sheet as follows:

Bonds payable	\$100,000
Unamortized premium on bonds payable (\$4,213 -\$747-\$792)...	<u>2,674</u>

Net book value of bonds payable\$102,674

In practice, most firms disclose the unamortized premium or discount in a footnote or parenthetically in the balance sheet.

Interest expense under the interest method is the product of the effective interest rate (6 percent) and net liability balance at the beginning of the period. Interest expense is therefore a constant percentage of beginning book value. The investor receives part of the original investment back with each interest payment. In 2001, this amount is \$747, which reduces the net investment and net bond liability at the beginning of 2002. Consequently, 2002 interest expense is less than that for 2001. The book value of the bonds at December 31, 2002, is the present value of the remaining cash flows:

$$\$102,674 = \left(PV_{\$100,000} = \frac{\$100,000}{(1 + 6\%)^3} \right) + \left(PV_{\$7,000 \text{ annuity}} = \$7,000 \left(\frac{1 - (1 + 6\%)^{-3}}{6\%} \right) \right)$$

An amortization table often is prepared to support bond journal entries. The table gives all the data necessary for journal entries over the term of the bond and each year's ending net liability balance. An amortization table is shown in Exhibit 2-2 for the interest method.

<u>Date</u>	<u>Interest payment</u>	<u>Interest Expense*</u>	<u>Premium Amortization +</u>	<u>Unamortized Premium ≠</u>	<u>Net Bond Liability #</u>
1/1/01				\$4,213	\$ 104,213
12/31/ 01	\$7,000	\$6,253	\$ 747	3,466	103,466
12/31/ 02	7,000	6,208	792	2,674	102,674
12/31/ 04	7,000	6,160	840	1,834	101,834

12/31/05	7,000	6,110	890	944	100,944
	<u>7,000</u>	<u>6,056</u>	<u>944</u>	0	100,000
	<u>\$35,000</u>	<u>\$30,787</u>	<u>\$4,213</u>		
* (Previous net liability balance) (0.06)					
$\$6,253 = \$104,213 (.06) \text{ for } 2001$					
+ (Interest payment) – (Interest expense)					
$\$747 = \$7,000 - \$6,253 \text{ for } 2001$					
≠ (previous unamortized premium) – (current-period amortization)					
$\$3,466 = \$4,213 - \$747 \text{ at December } 31, 2001$					
# $\$100,000 + (\text{current unamortized premium})$					
$\$103,466 = \$100,000 + \$3,466 \text{ at December } 31, 2001$					

Exhibit 2-2 Amortization table for XYZ Company bonds sold at premium-Interest Method

The **straight-line method** is a popular alternative to the interest method that amortizes an equal amount of discount or premium each interest period. Interest expense equals the cash interest paid less premium amortized or plus discount amortized. This method produces a stable dollar amount of interest expense each period rather than a constraint rate of interest each period.

The straight-line method recognizes the average amount of interest each year $\left(\$6,157 = \frac{\$30,787}{5} \right)$, while the interest method reflects the changing debt balance. The straight-line method is allowed only when interest expense is not materially different under the two methods. For example, the method seriously misstates interest expense early in the term of a zero coupon bond. Similarly, very long bond terms magnify the differences between the two methods because the initial net liability can be considerably smaller or larger than face value.

? Why is interest expense decreased by the amount of premium

amortized?

Section C: bonds sell at a discount, Market rate = 8 percent; Accounting by Issuer and Investor.

$$\begin{aligned}\text{Price} &= \left(PV_{\$100,000, 8\%} = \frac{\$100,000}{(1 + 8\%)^5} \right) + \left(PV_{\$7,000 \text{ amortiy}, 8\%} = \$7,000 \left(\frac{1 - (1 + 8\%)^{-5}}{8\%} \right) \right) \\ &= \$68,058 + \$27,949 = \$96,007\end{aligned}$$

The XYZ company bonds sell at a discount in this case because the stated rate is less than the yield rate on similar bonds. The discount is recorded in the discount on bonds payable account, a contra liability valuation account, which is subtracted from bonds payable to yield the net liability at present value. Although the primary focus of this chapter is on accounting for the debtor company, we illustrate accounting for the bond holder-investor (creditor) in this example. The investor classifies the bond holdings in an investment account that includes acquisition price and any commissions and taxes on purchase.

Example: the investor in this example is T-Company. When the creditor intends to hold the bonds to maturity (as is assumed here), the accounting for the creditor is parallel to that of the debtor, although the creditor typically uses the net method rather than separately reporting a premium or discount. Also, the amortization period for the creditor runs from the purchase date to maturity, which is often shorter than the issuing company's amortization period.

The entries for the first two years after the sale of the XYZ bonds follow, along with an amortization table (See Exhibit 2-3) and the relevant portion of the balance sheet after two years. Only the interest method is illustrated, although the straight-line method could be used by either firm.

XYZ Company

(issuer)

T-Company

(investor)

January 1, 2001 –*Issue bonds:*

Cash96, 007

Investment in bonds.....96,007

Discount on bonds payable3, 993

Cash96,007

Bonds payable100,000

December 31, 2001 – Interest Expense:

Interest expense7,681*

Cash7,000

Discount on bonds payable681

Investment in bonds681

Cash (\$100,000× 7%)7,000

Interest revenue7,681

* 7, 681 = \$96,007(0.08)

December 31, 2002 – *Interest expense:*

Interest expense7,735*

Cash 7,000

Discount on bonds payable735

Investment in bonds 735

Cash (\$100,000× 0.07)7,000

Interest revenue 7,735

* \$7,735 = (\$96,007 +681) (0.08)

XYZ Company**Portion of Long-term Debt section of Balance sheet****December 31, 2002**

Bonds payable\$100,000

Unamortized discount on bonds payable

(\$3,993-\$681-\$735)..... (2,577)

Net book value of bonds payable\$97,423

	Interest	Interest	Discount	Unamortized	Net bond
<u>Date</u>	<u>Payment</u>	<u>Expense*</u>	<u>Amortization ⁺</u>	<u>Discount [≠]</u>	<u>Liability [#]</u>
1/1/01				\$3,993	\$96,007
12/31/01	\$ 7,000	\$7,681	\$681	3,312	96,688
12/31/02	7,000	7,735	735	2,577	97,423
12/31/03	7,000	7,794	794	1,783	98,217
12/31/04	7,000	7,857	857	926	99,074
12/31/05	<u>7,000</u>	<u>7,926</u>	<u>926</u>	0	100,000
	<u>\$35,000</u>	<u>\$38,993</u>	<u>\$3,993</u>		
<p>* (previous net liability balance) (.08). \$7,681 = \$96,007 (.08) for 2001.</p> <p>+ (Interest expense) – (Interest payment). \$681 = \$7,681 - \$7,000 for 2001</p> <p>≠ (previous unamortized discount) – (current period amortization).</p> <p>\$3,312 = \$3,993 - \$681 at Dec.31, 2001.</p> <p># \$100,000 – (current unamortized discount). \$96,688 = \$100,000 - \$3,312 at Dec.31, 2001.</p>					

Exhibit 2-3: Amortization table for XYZ company bonds sold at discount-Interest Method.

The initial \$3,993 discount is the amount in excess of the total bond price that the issuer must pay the investor at maturity. Therefore, the discount represents interest, in addition to the cash interest payments required over the bond term. A portion of the discount is recognized (amortized) each period, causing both interest expense and the net bond liability to increase.

Price of bond issue = present value of principal and interest payments

$$= \left(PV_{pr} = \frac{FV}{(1+i)^n} \right) + \left(PV_A = R \left(\frac{1-(1+i)^{-n}}{i} \right) \right)$$

Where i = effective interest rate per six-month period

n = number of semiannual periods in bond term

FV = Face value of the bond

PV_{pr} = present value of principal

PV_A = present value of annuity

R = Periodic interest payment

Initial discount = Face value-price of bond issue

(effective rate exceeds stated rate)

Or :

Initial premium = price of bond issue-Face value

(stated rate exceeds effective rate)

Net book value of bonds = Face value+ unamortized premium

Or : = Face value-unamortized discount

Premium

Discount

As maturity approaches:

Unamortized amount

Declines

Declines

Net book value	Declines	Increase
Annual interest expense*	Declines	Increases
* Under interest method. Constant under straight-line method		
Two method of Amortizing premium and discount		
	Interest Method	Sraight line method
Annual interest expense	changes each year	changes over term
Annual interest expense as	change over term	changes each year
a percentage of beginning		
book value		

Exhibit 2-4 Summary table: Accounting for bonds, assuming semi-annual Interest payments

When completely amortized, the net bond liability and the bond investment account have increased to \$100,000, the maturity amount. Total interest expense over the bond term is \$38,993 the sum of cash interest payments (\$35,000) and the bond discount (\$3,993).

? Why is interest expense increased by the amount of discount amortized?

Exhibit 2-4 summarizes several aspects of bond accounting. The exhibit is designed for semiannual interest payments, the usual situation.

Activity -2

East Africa Group (EAG) issued 100, 9 percent, \$1,000 bonds on July 1, 2001, yielding 12 percent. The bonds pay interest each December 31 and June 30. The bonds mature five years from the issue date. EAG's fiscal year ends June 30.

Required:

1. Compute the bond issue proceeds, expressed as a percentage of face value.
2. Prepare the journal entry to record the bond issue.
3. Prepare the journal entries to record the first two interest payments under both the interest method and the straight-line method.
4. Provide the balance sheet disclosure of the net bond liability at June 30, 2002, under both methods of amortization.

You can compare your answer for activity 2 with the following

1. the semiannual interest payment is \$4,500 ($\$100,000 \times 9\%/2$)

$$\begin{aligned}\text{Bond proceeds} &= \left(\frac{\$100,000}{(1 + 6\%)^{10}} \right) + \$4,500 \left(\frac{1 - (1 + 6\%)^{-10}}{6\%} \right) \\ &= \$55,839 + \$33,120 \\ &= \$88,959\end{aligned}$$

Proceeds as a percent of face value = $88 \frac{23}{24}$ or 89

(round to the nearest number)

2. July 1, 2001

Cash	88, 959
Discount on bonds payable	11,041
Bonds payable	100,000

3. December 31, 2001

	Interest	straight-line
--	----------	---------------

	method	method
Interest expense	5,338*	5,604
Discount on bonds payable	838	1,104 ⁺
Cash.....	4,500	4,500

* \$5,338 = 0.06(\$88,959)

+ \$1,104 = \$11,041 ÷ 10 semiannual interest periods

June 30, 2002

Interest expense	5,388*	5,604
Discount on bonds payable.....	888	1,104
Cash.....	4,500	4,500

* \$5,388 = 0.06 (\$88,959 + 838)

4. Balance sheet, long term liability section, June 30, 2002:

	Interest	straight-line
	<u>method</u>	<u>method</u>
Bonds payable	\$100,000	\$100,000
Unamortized discount	<u>9,315*</u>	<u>8,833⁺</u>
Net bond liability	<u>\$90,685</u>	<u>\$91,167</u>

* \$9,315 = \$11,041 - \$838 - \$888

+ \$9,833 = \$11,041 - \$1,104 - \$1,104

2.2.5 Bond Issue costs

Bond issue costs include legal, accounting, underwriting, commission, engraving, printing, registration, and promotion costs. These costs are paid by the issuer and reduce the net proceeds from the bond issue, thus raising the effective rate for the issuer.

Bond issue costs are classified as a deferred charge (long-term asset) rather than as a reduction of premium or increase in discount. Over the bond term, the bond issue costs are amortized to expense. The rationale for gradual recognition is that the bond issue costs were necessarily incurred to obtain debt financing. The funds obtained presumably contribute to revenue over the bond term. Therefore, the bond issue costs should be recognized over that same period. The straight line method is the most commonly used method, but the interest method also may be used.

To illustrate accounting for bond issue costs, assume that \$3,600 is incurred by XYZ Company to issue the bonds in the previous situations. The bond issue costs are amortized by the straight line method at the rate of \$720 per year ($\$3,600/5$). XYZ Company makes the following entries in addition to those previously recorded.

January 1, 2001 – *Record bond issue costs:*

Bond issue cost	3,600
Cash	3,600

December 31, 2001-2005- *Amortize bond issue cost:*

Bond issue expense ($3,600/5$)	720
Bond issue cost	720

Effects on XYZ company's 2001 income statement and balance sheet:

Income statement: bond issue expense..... \$720

Balance sheet: long-term deferred charge $(3,600-\$720)=\2880

? Why is bond issue costs amortized to expense over the term of the bond?

2.2.6 Bonds Issued between Interest Dates

In the previous examples, bonds were issued on an interest date, a schedule we choose to emphasize the accounting principles. However, bonds usually are not issued on an interest date, and semiannual interest payments are more typical. Two new problems arise: accounting for accrued interest from the most recent interest payment date and computing the issue price.

New information for the XYZ company bond issue:

1. The bond date is March 1, 2001 and the maturity date is March 31, 2006.
2. The issue date is June 1, 2001 (between interest dates)
3. The bonds pay interest each September 30 and March 31.
4. The stated rate is 8 percent, and the effective interest rate is 10 percent.
5. Face value is \$100,000.

Exhibit 2-5 illustrates the issuance of the XYZ company bond issue between interest date.

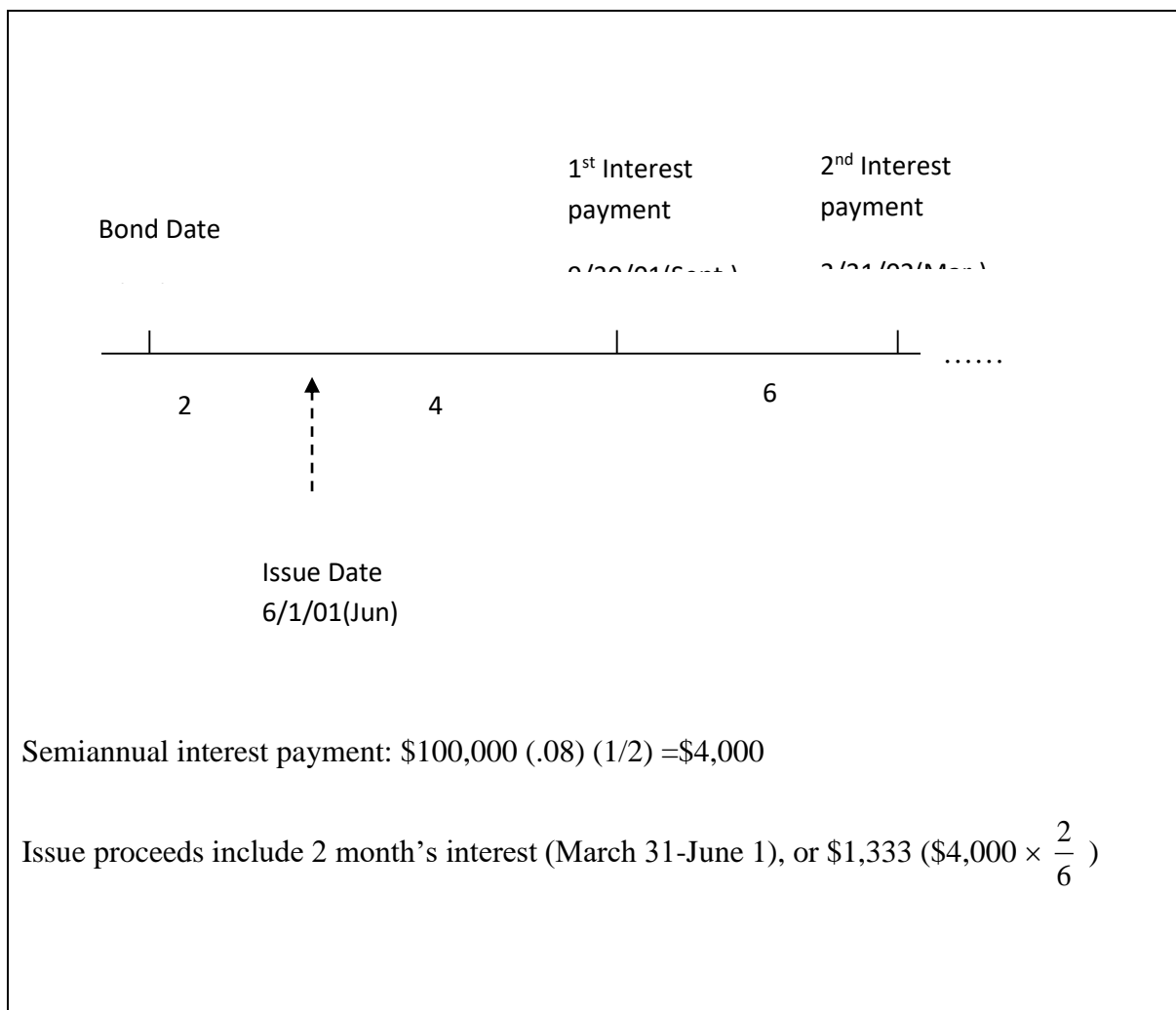


Exhibit 2-5: XYZ company bonds Issued between interest dates.

The price of XYZ company bond issued between interest dates is calculated as follows:

Price of bond at immediately preceding interest date (3/31/01):

$$\text{Face value} \left[PV_p = \frac{FV}{(1+i)^n} = \frac{\$100,000}{(1+5\%)^{10}} \right] \dots\dots\dots \$61,391$$

$$\text{Interest} \left[PV_A = R \left(\frac{1-(1+i)^{-n}}{i} \right) = 4,000 \left(\frac{1-(1+5\%)^{-10}}{5\%} \right) \right] \dots\dots 30,887$$

Total present value\$92,278

Growth in bond present value at yield rate, from

$$3/31/01 \text{ to } 6/1/01 \left[\$92,278(.10) (2/12) \right] \dots\dots\dots 1,538$$

Cash interest at stated rate from 3/31/01 to 6/1/01

$$[\$100,000 (.08) (2/12)] \dots\dots\dots \underline{(1,333)}$$

Price of bond at 6/1/01\$92,483

The \$1,538 growth component is the normal growth in the present value of the bond from March 31 to June 1 and is added for bonds issued at either a discount or a premium. The cash interest is the portion of that return due September 30 as a separate payment. Interest payments reduce the present value of a bond by the amount of the payment. Therefore, the two months' cash interest is deducted from the bond price.

Interpolation, using the bond prices at the two interest payment dates bordering the issue date, also can be used to determine the issue price.

Price of 3/31/01 (from previous calculation)\$92,278

Price at 9/30/01:

$$\text{Face value} \left[PV_p = \frac{\$100,000}{(1 + 5\%)^9} \right] \dots\dots\dots \$64,461$$

$$\text{Interest} \left[PV_A = \$4,000 \left(\frac{1 - (1 + 5\%)^{-9}}{5\%} \right) \right] \dots\dots\dots \underline{28,431}$$

$$\text{Total present value} \dots\dots\dots \$92,892$$

Interpolated price at 6/1/01:

$$\$92,278 - 2/6 (\$92,278 - \$92,892) = \$92,483$$

Or:

$$\$92,892 + 4/6 (+\$92,278 - \$92,892) = \$92,483$$

? What new accounting issues arise when bonds are issued between interest dates?

The bond issue date (June 1) is two months, or 2/6 of a semiannual period after March 31. Therefore, 2/6 of the difference from the March 31 and September 30 prices is subtracted from the March 31 price in the first interpolation. In the second interpolation, 4/6 of the difference is added to the September 30 price to account for the additional four months the bond is outstanding. This approach is followed whether the bond is issued at a premium or a discount.

Accrued interest at the stated rate from March 31 to June 1 is collected from the investor, effectively an interest-free loan to the issuer. The initial discount or premium amount is independent of accrued interest and equals face value less, the bond price, as usual. The following entry records the bond issuance by XYZ Company:

June 1, 2001 – *Issue bonds:*

Cash	93,816*
Discount on bonds payable	7,517 ⁺
Interest payable	1,333 [≠]
Bonds payable	100,000

* $\$92,483 + \$100,000(8\%) (2/12)$

+ $\$100,000 - \$92,483$

$\neq \$100,000 (.08) (2/12)$: two months' accrued interest from the bond date to the issue date is collected from the investor and then is reimbursed on the first interest payment date.

The entry to record the first interest payment after issuance (September 30) takes into account the partial interest period and accrues interest from the previous interest date(March 31). The amortization table constructed for the same bond but assuming issuance on March 31, 2001 is constructed. The interest date immediately preceding the actual issue date is used as the basis for the September 30 entry under the interest method. part of this table, as well as the September 30, 2001, interest entry follows:

<u>Date</u>	<u>Interest Payment</u>	<u>Interest Expense</u>	<u>Discount Amortization</u>	<u>Unamortized Discount</u>	<u>Net bond Liability</u>
3/31/01				\$7,722	\$92,278*
9/30/01	\$4,000 ⁺	\$4,614 [≠]	\$614 [≠]	7,108#	92,892 //
3/31/02	4,000	4,645	645	6,463	93,537

* Price if sold on 3/31/01 to yield 10 percent

+ $\$100,000 (.08) (1 \div 2)$

$\neq \$92,278(.10) (1 \div 2)$

\$4,614 -\$4,000

\$7,722-\$614

// \$92,278+\$614 or \$100,000 -\$7,108

September 30, 2001 – *Interest payment* (Interest method):

Interest payable1,333

Interest expense3,076*

Discount on bonds payable409+

Cash (\$100,000× .08/2)4,000

* The interest for four months based on the March 31 issue price \$3,076 =

\$92, 278(.10) (4÷12). Also, \$3,076 = \$4,614(4÷6).

+ The amortization for four months based on the March 31 issue price; \$409 = \$614(4÷6).

Also, the change in bond value from June 1 to September 30: \$409 = \$92,892 - \$92,483.

After the first interest payment entry, the amortization table above (based on issuance at March 31) is used for the remaining entries during the bond term.

Under the straight-line method of amortization, the bond discount is amortized over the 58 month bond term at \$129.60 per month (\$7,517/58). The September 30 entry under the straight-line method follows:

September 30, 2001- *Interest payment* (straight-line method):

Interest payable 1,333

Interest expense3,185

Discount on bonds payable518*

Cash (\$100,000×.08/2)4,000

* (\$7,517/58 month bond term) (4 months)

Activity- 3

Berchako Ethiopia, a calendar-year firm, issued \$50,000 of 6 percent bonds on October 1, 2001. The bonds are dated January 1, 2001, pay interest each June 30 and December 31, yield 4% and mature December 31, 2010. \$2,000 of bond issue costs was incurred.

Required:

1. Compute the amount of the proceeds from the bond issue. Separate the accrued interest from the bond price.
2. Prepare the Journal entry to record the bond issue.
3. Prepare the journal entry for the first interest payment under the interest method and the straight-line method.

You can compare your answer for activity 3 with the following

1. The semiannual interest payment is \$1,500 ($\$50,000 \times .06/2$). At July 1, 2001, 19 semiannual interest periods remain in the bond term. One-half of an interest period has elapsed at October 1, the issue date.

Price at

$$\begin{aligned} \text{July 1, 2001} &= \left[PV_p = \frac{FV}{(1+i)^n} \right] + \left[PV_A = R \left(\frac{1 - (1+i)^{-n}}{i} \right) \right] \\ &= \frac{\$50,000}{(1 + 4\% / 2)^{19}} + \$1,500 \left(\frac{1 - \left(1 + \frac{4\%}{2} \right)^{-19}}{4\% / 2} \right) = \$57,839 \end{aligned}$$

Growth in bond value to

$$\text{October 1, 2001} = .04(\$57,839) (3 \div 2) \dots\dots\dots 578$$

Cash interest at stated rate

$$\text{to October 1, 2001} = .06 (\$50,000) (3 \div 12) \dots\dots\dots (750)$$

$$\text{Bond issue price at October 1, 2001} \dots\dots\dots \$57,667$$

Accrued interest to October 1, 2001: $\$1,500 \div 2$ 750

Bond proceeds \$58,417

2. October 1, 2001

Cash58,417

Interest payable750

Premium on bonds payable 7,667

Bonds payable50,000

Bond issue costs2,000

Cash2,000

3. There are $9(12) + 3 = 111$ months in the bond term

Interest	straight-line
Method	Method

December 31, 2001:

Interest payable	750	750
Interest expense	578*	543
Premium on bonds payable	172	207 ⁺
Cash	1,500	1,500

*\$578 = $(3/12) (.04) (\$57,839)$

+ \$207 = $(3/111) (\$7,667)$

Bond issue expense	54	54
Bond issue cost	54	54

\$54 = $(3/111) (\$2,000)$

2.3 DEBT SECURITIES WITH EQUITY RIGHTS

Firms issue debt securities that include rights to acquire capital stock. These rights enhance marketability and improve the terms to the issuer. The investor receives a potential right to become a share holder and participate in stock price appreciation in addition to principal and interest payments. Two common examples of this type of hybrid security are nonconvertible bonds with detachable stock warrants and bonds convertible into capital stock.

2.3.1 Bonds with Detachable stock purchase Warrants

A stock warrant conveys the option to purchase from the issuer a specified number of shares of common stock at a designated price per share within a stated time period (the exercise period). The warrant is valuable because it enables the holder to buy stock for less than market value if the market value rises above the designated price. Hence, warrants generally increase the bond price.

Note: Warrants are either detachable or non detachable. If detachable, the warrants are traded as separate securities. If non detachable, the debt security must be surrendered to obtain the stock.

The portion of the bond price must be allocated to the warrants if they are detachable. The allocation is credited to a contributed capital (owners' equity) account calculated on the market values of the two securities on the date of issuance (*the proportional method*). If only the warrants have a readily determinable market value, the bonds are valued at the difference between the total bond price and the market value of the warrants (*the incremental method*).

In contrast, if the stock purchase warrants are not detachable, no separate market for them exists, and the entire bond price is allocated to the bonds.

Once the issue price is allocated to the bonds and detachable warrants, bond accounting is not affected by the warrants. Therefore, the following example of accounting for nonconvertible bonds with detachable stock purchase warrants does not illustrate interest recognition.

Example, Ethiopian Telecommunication Corporation (ETC), issues \$100, 000 of 8 percent, 10-year, non convertible bonds with detachable stock purchase warrants. Dashen Bank purchases the entire issue. Each \$1,000 bond carries 10 warrants. Each warrant entitles Dashen Bank to purchase one share of \$10 par common stock for \$15. The bond issue therefore includes 1,000 warrants

(100 bonds × 10 warrants per bond). Assume the bond issue sells for 105 exclusive of accrued interest. Shortly after issuance, the warrants trade for \$4 each.

Note: par value for common stock is the minimum stock issue price. It appears on the stock certificate, is used in certain dividend calculations and constitutes the minimum capital per share to be retained. Common stock is credited with par value; contributed capital in excess of par is credited with proceeds in excess of par value.

1. **Proportional method** (Both securities have market values.) Shortly after issuance the bonds were quoted at 103 ex-warrants (without warrants attached).

Market value of bonds (\$100,000×1.03)\$103,000

Market value of warrants (\$4× 1,000) 4,000

Total market value of bonds and warrants\$107,000

Allocation of proceeds to bonds $\left(\$105,000 \times \left(\frac{\$103,000}{\$107,000} \right) \right)$...\$101,075

Allocation of proceeds to warrants $\left(\$105,000 \times \left(\frac{\$4,000}{\$107,000} \right) \right)$... 3,925

Total proceeds allocated\$105,000

ETC (issuer)

Dashen Bank (investor)

Issuance entry:

Cash 105,000

Investment in bonds ...101,075

Bonds payable100, 000 Investment in detach

Detachable stock

able stock warrants ...3,925

Warrants (OE)3,925

cash..... 105,000

Premium on bonds payable 1,075*

* \$101,075-\$100,000

2. **Incremental method** (only one security has a market value). Assume now that not market value is determined for the bonds as separate securities. The warrants trade for \$4 each.

ETC (issuer)	Dashen Bank (investor)
Issuance entry:	
Cash .....105, 000	Investment in bonds.....101,000
Bonds payable .....100,000	Investment in detach-
Detachable stock	able stock warrants .....4,000
warrants .....4,000*	Cash .....105,000
Premium on bonds	
Payable .....1,000+	
* (1,000 warrants) (\$4)	
+ value allocated to bonds-face value of bonds, or (\$105,000 -\$4,000)-	
\$100,000.	

Under the incremental method, the warrants are credited at market value. The remaining, or incremental, portion of the proceeds (\$101,000) is allocated to the bonds. The amount of premium recorded equals the difference between the amount allocated to the bonds and face value.

The entries to account for exercise and expiration under the incremental method example, assuming no subsequent change in the market value of warrants, are as follows:

ETC (issuer)	Dashen Bank (investor)
Entry to account for exercise of 900 warrants:	
Cash (900×\$15) .....13, 500	Investment in common stock.....17,100

Detachable stock warrants .....3,600*	Investment in detach-
Common stock (900×\$10).....9, 000	able stock warrants .....3,600
Contributed capital in	Cash .....13,500
excess of par 8,100	

* \$4 (900 warrants)

Entry to account for expiration of remaining 100 warrants:

Detachable stock warrants.....4,00*	Loss on investment.....4,00
Contributed capital from	Investment in
expiration of detach-	detachable
able stock warrants .....4,00	stock warrants .....4,00

* \$4 (100 warrants)

Detachable stock warrants is reduced by the original amount allocated to it (\$4 per warrants), and \$3,600 of the resources allocated to warrants is allocated to other owners' equity accounts up on exercise.

An expiration entry is recorded at the end of the exercise period for any warrants that remain outstanding, whether through oversight or because of an unfavorable stock price. The issuing company retains the portion of the bond price originally allocated to the expired warrants.

? How is the premium (or discount) computed for bonds issued with

detachable warrants?

2.3.2 Convertible Bonds

A convertible bond is exchangeable for capital stock (usually common stock) of the issuer at the option of the investor. Typically, convertible bonds are also callable at a specified redemption, or call, price at the option of the issuer. If the bonds are called, the holders either convert the bonds or accept the call price. Convertible bonds often are marketable at lower interest rates than conventional bonds because investors assign a value to the conversion privilege.

The primary attraction of convertibles to investors is the potential for increased value if the stock appreciates. If it does not, the investor continues to receive both interest and principal (although usually at a lower rate than non convertible bonds would provide.)

Convertible bonds are advantageous to the issuer for several reasons:

- The prospect for raising debt capital often is improved.
- The bonds often pay a lower interest rate than do nonconvertible bonds.
- If the bonds are converted, the face value is never paid.
- Fewer shares may be issued on conversion than in a direct sale of stock.
- The call option protects the issuer from having to issue stock with an aggregate value in excess of the call price.

Convertible bonds are not without disadvantages, however. If the stock price rises, the issuing company foregoes the higher proceeds that would be possible from a direct sale of stock. In the opposite case, the firm must continue to service the debt.

A separate market does not exist for either the bond standing alone or the conversion privilege. There is no objective basis (such as a market or an exchange transaction) for allocating the bond price to the bond and the conversion feature. The value of the conversion feature is contingent on a future stock price that cannot be predicted.

Accounting for interest expense and amortization of premium or discount is not affected by convertibility. The entire bond term is used for amortization because the date of conversion cannot be anticipated. Accounting for interest is omitted in the example that follows.

Example: Assume that ABC Company sells \$100,000 of 8 percent convertible bonds for \$106,000. Each \$1,000 bond is convertible to 10 shares of ABC company \$10 par common stock on any interest date after the end of the second year from the date of issuance. (In practice, conversion is generally possible on any date within the conversion period. The restriction on conversion is used only to facilitate the example.)

Issuance entry:

Cash	106,000
Premium on bonds payable	6,000
Bonds payable	100,000

When the bonds are converted, the issuer updates interest expense and amortization of premium or discount to the date of conversion. Then, bonds payable is closed. Two methods are acceptable for recording the stock issued up on conversion:

1. **Book-Value Method:** Record the stock at the book value of the convertible bonds: recognize neither gain nor loss.
2. **Market-Value Method:** Record the stock at the market value of stock or debt, whichever is more reliable. A gain or loss equal to the difference between the market value and the book value of debt is recognized.

The following entries illustrate both methods. Assume that the bonds are converted on an interest date. On the conversion date, the stock price is \$110 per share, and \$3,000 of premium remains unamortized after updating the premium account.

	Book-value	Market value
	Method	Method
Entry for conversion of bonds:		
Bonds payable	100,000	100,000
Premium on bonds payable	3,000	3,000
Loss on conversion of bonds .....	...	7,000 [≠]
Common stock	10,000*	10,000
Contributed capital in		
excess of par..	93,000 ⁺	100,000 [#]

* (100 bonds) (10 shares per bond)(\$10 par)

+ Book value of bonds is \$103,000; $\$103,000 - \$10,000 = \$93,000$

≠ Market value of stock issued ($\$1,000 \text{ shares} \times \$110 = \$110,000$) less book value of bonds (\$103,000) equals loss of \$7,000

\$110,000(market value of shares issued) less \$10,000 (par value of shares issued)

Under the book-value method, the owners' equity accounts replace the bond accounts for the issuer. Under the market-value method, the owners' equity accounts are credited at the full market value, as if the issued stock were sold on the date of conversion. The gain or loss on conversion is not classified as extraordinary because the investor initiated the conversion. ABC's \$7,000 loss is the cash forgoes by issuing shares on bond conversion, but it is not necessarily the economic loss because the market value of the bonds is not considered in the accounting.

If the book value of the bonds is less than the total par of stock issued on conversion, a retained earnings is debited for the difference. For example, if the total par of ABC stock issued is \$105,000 (assume \$105 par), retained earnings is debited for \$2,000 under the book-value method.

The book-value method appears to be more popular. Many accountants view the conversion as the culmination of a single transaction that started when the convertible bonds were issued. The valuation of issued stock thus is restricted to the actual resources received on the bond issue, adjusted for amortization to the date of conversion. Furthermore, this view holds that the gain (loss) under the market-value method is not supported by the value of resources originally received on the bond issue. Others prefer the market-value method because it uses current value to measure the conversion. The valuation of the stock issued is based on the value received if the shares were sold.

Induced Conversion of Convertible Debt: Issuers of convertible debt sometimes changes the conversion provisions after the issuance date to induce prompt conversion. The inducement is an incentive over and above the original shares to be issued on conversion. Common inducements include an increase in the number of shares issued per bond, issuance of stock rights, and cash or other consideration. Declining interest rates and a preference for lower debt levels can prompt an induced conversion.

The issuer recognizes an expense equal to the fair value of consideration in excess of the fair value of the securities issuable under the original conversion terms. The expense is not classified as an extraordinary item because the original debt agreement remains in effect during the inducement period, and the debt is extinguished at the bondholder's option rather than the issuer's. Therefore, this condition applies only to changes in conversion provisions exercisable for a limited time, that is, only changes made to induce prompt conversion.

The expense is recognized only for bonds converted during the limited time period, and the market value of consideration transferred is measured at the date the inducement is accepted.

Example: Africa Insurance Company issued 500, 6 percent convertible bonds issued at face value (\$1, 000). Each bond is convertible into 10 shares of \$20 par common stock. Some time after issuance, Africa Insurance offers two additional shares of common stock for each bond as an inducement to convert. The offer is open for a two month-period. The bondholders accept the inducement within the required period. The market price of the common stock on the acceptance date (also an interest date) is \$110. The entries to record the induced conversion under the book-value and market-value methods are as follows:

Book-Value Method**Market-value Method**

Conversion entry:

Bonds payable .....500,000	Bonds payable .....500,000
Debt conversion expense..... 110,000*	Debt conversion expense.....110,000
Common stock .....120,000 ⁺	Loss on conversion.....50,000 [≠]
Contributed capital in excess of par 490,000	Common stock .....120,000 Contributed capital in excess of par..... 540,000 [#]

* (12 -10)(500)(\$110) – the market value of two additional shares per bond.

+ 12(500) (\$20)

≠ Difference between market value of stock issued (\$660,000) and book value of bonds converted (\$500,000), less the cost of the inducement (\$110,000)

\$660,000 - \$120,000

The issuer recognizes the market value of the two additional inducement shares per bond as an expense under both methods. Under the book-value method, the expense is effectively capitalized as an increase in owners' equity reflecting the issuance of additional common shares without proceeds.

Note: the additional shares issued are similar to a stock dividend. A stock dividend is the issuance of shares to existing shareholders without proceeds to the issuing firm. Stock dividends reduce retained earnings, just as debt conversion expense does.

Under the market-value method, part of the total loss on conversion is reclassified as debt conversion expense. The increase to owners' equity is measured at the total market value of shares

issued. Under either method, if cash is the inducement, the debt conversion expense equals the amount of cash paid.

One view of induced conversions holds that expense recognition is inappropriate for transactions involving a firm and its equity investors. Others see the inducement as an extinguishment implying that market values should be recorded. Yet another view holds that the cost of the inducement should be treated as a reduction of the equity capital provided. However, in SFAS No. 84, the FASB reasoned that a firm incurs a cost not expected under the original agreement when inducing conversion. Were it not for the extra inducement, the conversion would not have occurred.

Activity- 4

Why is a value recorded for detachable warrants but not for the conversion feature of convertible bonds?

You can compare your answer for activity- 4 with the following;

Since detachable stock warrants are traded as separate securities, the portion of the bond price be allocated to the warrants. However, because a separate market does not exist for either the bond standing alone or the conversion feature, there is no objective basis (such as a market or an exchange transaction) for allocating the bond price to the bond and the conversion feature.

2.4 EXTINGUISHMENT OF LONG-TERM DEBT

Firms typically use the proceeds of long-term debt instruments for the entire debt term. At maturity all discount or premium is fully amortized: gains and losses are not recognized on normal retirement. Firms can, however, retire debt before maturity. Early retirement of debt decreases the debt-equity ratio and can facilitate future debt issuance.

The incentives for retiring bonds differ depending on whether interest rates have increased or decreased since the bonds were issued:

1. If interest rates have increased, the bond's market price (the amount paid to retire the bonds early) has fallen, often below net book value. The result is a gain recognized by the issuer on retirement.
2. If interest rates have decreased, the bond's market price has increased. In this case, the issuing company retires higher-interest-rate bonds, thus reducing future interest costs. However, a loss is recognized because the market price of the bond exceeds book value. Many firms take this opportunity to issue lower-rate debt in a refinancing of the higher-rate debt, just as homeowners do when they refinance their home mortgages when rates decline.

The main reporting issues are determining what constitutes a debt extinguishment and how to classify the gain or loss on extinguishment. The gain or loss is the difference between the book value and the market value of the debt on the date of extinguishment.

A liability is derecognized (removed from the balance sheet) only if it is extinguished. A liability is extinguished only if one of the following two criteria is met:

1. The debtor pays the creditor and is relieved of its obligation (paying includes delivery of cash, other financial assets, goods, or services).
2. The debtor is legally released from being the primary obligor under the liability, either judicially or by the creditor.

Debtors may be released (criterion 2) from responsibility for a liability for a variety of reasons. A legal release is accomplished, for example, when a debtor sells a real estate asset that serves as collateral for an assumable mortgage loan. When the buyer assumes the loan, the seller (original debtor) is legally released from the debt. The assumption of the loan by the seller extinguishes the debtor's liability.

The creditor also may release the debtor provided that a third party assumes the obligation and the original debtor becomes secondarily liable. This type of release also extinguishes the debtor's liability. However, the original debtor becomes a guarantor and may be required to recognize or disclose a contingent liability. If a guarantee contingent liability is recognized (when probable and estimable), the guarantee liability reduces the gain or increase the loss on extinguishment of the original debt.

Accounting for debt extinguishment involves:

- Updating interest expense, discount or premium, and related issue costs to the retirement date.
- Removing the liability accounts.
- Recording the transfer of cash, other resources, or debt securities.
- Recording an extraordinary gain or loss.

Debt extinguishment can be accomplished in a variety of ways, as illustrated in the following sections.

2.4.1 Extinguishment of Bonds by Open-Market purchase or exercise of call privilege.

In an open-market purchase of bonds, the issuer pays the current market price as would any investor purchasing the bonds. If bonds carry a **call privilege**, the issuer may retire the debt by paying the call price during a specified period. The call price places a ceiling on the market price. Investors who purchase callable bonds are at a disadvantage if interest rates decline because they may have to surrender bonds that pay higher interest than do noncallable bonds. For this reason, callable bonds often are issued with higher interest rates. In addition, the call price typically exceeds face value by the call premium that can decline each year of the bond term.

Note: A **call privilege** is the feature of the bond that allows the issuing company to buy back, or call, outstanding bonds from bondholders before their scheduled maturity date. The feature affords the company some protection against being stuck with relatively high-cost debt in the event interest rates fall during the period to maturity.

As a basis for an example, Exhibit 2-6 repeats a portion of the amortization table for XYZ company bonds in Exhibit 2-2. Assume that interest rates have increased since the bonds were issued and assume that on March 1, 2002, XYZ purchases 20 percent (\$20,000 face value) of the bonds on the open market at 90. The price decline reflects increased interest rates. If the issue were called instead, the call price would be used in lieu of the market price. Otherwise, the accounting is the same.

Issue date: January 1, 2001		Total face value: \$100, 0000			
Stated interest rate: 7 percent		Bond date: January 1, 2001			
Interest payment date: December 31		Yield rate at issuance: 6 percent			
Maturity date: December 31, 2005		Bond issue costs: \$3,600			
Partial Amortization Table for XZY company Bonds					
Sold at premium-Interest Method					
Date	Interest payment	Interest expense	Premium Amortization	Unamortized Premium	Net Bond Liability
1/1/01				\$4,213	\$104,213
12/31/01	\$ 7,000	\$6,253	\$747	3,466	103,466
12/31/02	7,000	6,208	792	2,674	102,674

Exhibit 2-6: Data for open-Market extinguishment

The entries to record the extinguishment under the effective and straight-line methods are as follows

	Interest	Straight-line
	Method	method
March 1, 2002 – on portion retired: up date		
interest and premium amortization:		
Interest expense	207*	205
Premium on bonds payable	26	28+
Interest payable	233≠	233
* .06(\$103,466) (2/12)(.20)		
(Market rate at issuance) (Book value on 1/1/02) (2/12 year) (Portion of bond		
issue retired).		
+ \$4,213(2/60)(.20)		
(Original premium)(2 months /60 month bond term) (Portion of bond issue		
retired)		
≠ \$20,000 (.07) (2/12)		
(Accrued interest from January 1, 2002)		
March 1, 2002 – update bond issue expense:		
Bond issue expense	24*	24
Bond issue cost	24	24
* \$3,600 (2/60) (.20)		
(Total issue cost)(2 months /60 months bond term) (Portion of bond		
issue retired)		

March 1, 2002 – Remove relevant accounts and recognize gain:

Bonds payable	20,000	20,000
Premium on bonds payable	667*	646+
Interest payable	233	233
Cash.....	18,233≠	18,233
Bond issue cost	552#	552
Extraordinary gain, bond extinguishment.	2,115//	2,094**

* $\$3,466(.20) - \26

(Unamortized premium 1/1/02)(Portion of bond issue retired) – (Amount
of premium amortized on 3/1/02)

+ $\$4,213(46/60) (.20)$

(Original premium) (46 months remaining /60 month bond term) (Portion
of bond issue retired)

≠ $\$20,000 (.90) + \233 interest payable

$3,600(46/60)(.20)$

(Total issue cost) (46 months remaining/ 60- month bond term)(Portion of
bond issue retired.)

// Book value of bonds retired ($\$20,000 + \$667 = \$20,667$) less price of bonds

($\$18,000$) less unexpired bond issue cost on bonds retired ($\$552$) equals

the extraordinary gain of $\$2,115$.

** Calculation is similar to interest method

Extinguishment does not affect the accounting for the remaining 80 percent of the bond issue; 80 percent of the values in the amortization table would be used for the remaining bond term, as well as 80 percent of the bond issue costs.

The nature of the Extraordinary Item: The extraordinary gain in the XYZ company example is the difference between the total market price and the book value of the bonds, less the unexpired portion of the bond issue costs relating to the retired bonds. The remaining bond issue costs generate no future benefit. Brokerage fees and other costs of retiring the bonds also decrease the gain (increase the loss).

The extraordinary gain occurs because the market value of the bonds decreased below book value as a result of increased interest rates. However, it can be argued that the bond extinguishment does not alter XYZ's economic position because the debt was retired at market value. A more profitable alternative might be to apply the \$18,000 to a higher-yield investment. Retiring low-cost debt when interest rates rise is questionable, especially if additional debt issuances are contemplated.

Sinking-Fund Retirements: Ordinary Gain and Loss Classification

Early retirement of bonds fulfills the sinking-fund requirements of some bond issues. Gains and losses from such extinguishments made to satisfy requirements that must be met within one year of the extinguishment are treated as ordinary income items without regard to the means used to retire the debt.

Example: Assume that XYZ company was required by the bond indenture to retire \$20,000 of bonds by December 31, 2002, to satisfy a sinking-fund requirement. The date of retirement March 1, 2002, is within one year of the deadline. Therefore, the gain is reported as ordinary. In contrast, if the sinking-fund retirement deadline is May 1, 2004, the gain is classified as extraordinary because retirement did not occur within one year of the required date.

This exemption recognizes the difference between required and discretionary extinguishments and allows one year to complete the necessary arrangements for bond retirement. If an issuer must retire bonds under the indenture and does so within a year of the deadline, it is difficult to argue that the purpose of the retirement is to manipulate income. If bonds are retired two years ahead of schedule, the issuer could have motivations other than meeting a distant deadline.

Treasury Bonds: Regardless of the form extinguishment takes, if the issuer does not cancel its bonds after reacquisition but contemplates reissuance at a later date, treasury bonds, a contra bond payable account is debited in lieu of bonds payable. When the bonds are reissued, treasury bonds are credited rather than bonds payable, and a new discount or premium is recorded. If bonds are canceled, treasury bond is credited and bonds payable is debited. Like bonds payable, treasury bonds is debited or credited only with face value.

Retirement of convertible Debt: When Convertible bonds are converted, the gain or loss under the market-value method is classified as ordinary. Occasionally, firms retire convertible bonds through open-market purchase or other method. Gains and losses on these retirements are classified as extraordinary.

? Why is the gain or loss on debt retirement made June 30, 2001, to fulfill sinking-fund requirements that must be met by January 1, 2001, classified as ordinary?

2.4.2 Extinguishments of Bonds by Refunding

When a **refunding** takes place, one bond issued is replaced with another bond issued. One way of refunding is to issue new bonds in exchange for the old bonds. Cash is involved if the bond issues have different market values. More frequently, however, the proceeds from a new bond issue are used to retire the old issue because the holders of the old issue do not necessarily wish to become the new creditors. In both cases, the accounting for refunding is similar to all other forms of debt extinguishments. The following information illustrates the two situations involving refunding.

1. **Refunding by direct exchange of debt securities:** On January 1, 2001. Ethiopian Electric Power Corporation (EEPCO) issues \$100,000 of 10 year, 5 percent bonds at face value with interest payable each June 30 and December 31. On January 1, 2005, the bondholders agreed to exchange their bonds for \$90,000 of 20-year, 8 percent bonds with the same interest dates as the 5 percent bonds. The market rate of interest on similar bonds is 8 percent.

Analysis:

a) The bondholders receive 10 percent less principal but 60% more in the interest rate.

b) PV (Market value) of new bonds-----\$90,000

PV (Market value) of old bonds (12 semiannual

periods remain in the old issue):

$$\text{Principal} \left(\frac{\$100,000}{(1 + 4\%)^{12}} \right) \text{-----} \$62,460$$

$$\text{Interest} \left(\$2,500 \left(\frac{1 - (1 + 4\%)^{-12}}{4\%} \right) \right) \text{-----} \underline{23,463} \quad \underline{85,923}$$

Difference: economic loss to EEPCo -----\$4,077

January 1, 2005- *Refunding entry*:

Bonds payable, 5% -----100,000

Bonds payable, 8%-----90,000

Extraordinary gain, bond extinguishments -----10,000

EEPCo accepts the economic loss to extend the maturity 20 years and to avoid the costs of issuing the new bonds for cash. The creditors receive \$2,200 more in interest each year (\$7,200-\$5,000). EEPCo records a \$10,000 accounting gain yet sustains an economic loss of \$4,077 because increases in interest rates allow new bonds with a lower face value but a higher present value to replace the old bonds. By refunding the old bonds, EEPCo has committed itself to making a new stream of future cash payments with an increased present value.

This is an example of the problems that arise from using the market rate at issuance to measure the book value of bonds. EEPCo could invest \$85,923 at 8 percent and satisfy the remaining payments on the 5 percent bonds. Many accountants view this value as a more appropriate current valuation of the 5 percent bonds, particularly, if EEPCo intends to extinguish the bonds early.

2. **Refunding by issuing new debt and purchasing old debt:** On January 1, 2001, EEPCo issues \$100,000 of 10 year, 5 percent bonds at face value with interest payable each June 30 and December 31. On January 1, 2005, EEPCo issues at face value \$86,000 of 20 year, 8 percent bonds with the same interest dates as the 5 percent bonds. The market price of the old bonds is 86. The old bonds are retired.

January 1, 2005 – *Issue 8 percent bonds:*

Cash -----86,000

Bonds payable -----86,000

January 1, 2005–*Retire 5 percent bonds:*

Bonds payable -----100,000

Cash-----86,000

Extraordinary gain, bond extinguishments -----14,000

The accounting gain is \$14,000, but no economic gain or loss occurs because the 5 percent bonds were extinguished at market value.

<u>Methods of Extinguishment or Retirement</u>	<u>Classification of Gain or Loss</u>
1. Conversion of convertible bonds	Ordinary
2. Induced conversion of convertible bonds (gain, loss, and conversion expense)	Ordinary
3. Direct payment to creditors	Extraordinary
4. Sinking fund purchases made to satisfy sinking-fund requirements that must be met within one year of the purchase.	Ordinary
5. Issuance of equity securities	Extraordinary

6. Retirement of convertible debt	Extraordinary
7. Call	Extraordinary
8. Refunding	Extraordinary
9. Legal release from obligation	Extraordinary

Exhibit 2-7: Summary of Gain and Loss classification on debt

extinguishments and Retirements.

Activity- 5

This problem continues the Berchako Ethiopia bond issue from Activity -3. Main points of the problem: Berchako is a calendar year firm; \$50,000 of 6 percent bonds were issued on October 1, 2001; the bonds are dated January 1, 2001, pay interest each June 30 and December 31, yielded 4%, and mature December 31, 2010, \$2,000 of bond issue costs were incurred. The semiannual interest payment is \$1,500, and there are 111 months in the bond term. Additional information: A short segment of the amortization table for the bonds follows (using the interest method):

Date	Payment	Interest expense	Premium Amortization	Unamortized premium	Net Liability	Bond
1/1/05				\$5,288	\$55,288	
6/30/05	\$1,500	\$1,106	\$394	4,894	54,894	

On May 1, 2005, Berchako Ethiopia purchased and retired \$20,000 of the bond at 108.

Required:

1. A verification of the January 1, 2005, net liability balance of \$55,288 in the preceding partial table.

2.The May 1, 2005, journal entry for the interest accrual on the bonds to be retired and the entry for retirement, using the interest method.

You can compare your answer for Activity-5 with the following:

1.Six years (12 Semiannual interest periods) remain in the bond term at January 1, 2005. The net bond liability on that date is:

$$\left(PV_{pr} = \frac{FV}{(1+i)^n} \right) + \left(PV_A = R \left(\frac{1 - (1+i)^{-n}}{i} \right) \right)$$

$$\left(PV_{pr} = \frac{\$50,000}{(1+2\%)^{12}} \right) + \left(PV_A = \$1,500 \left(\frac{1 - (1+2\%)^{-12}}{2\%} \right) \right)$$

$$(\$39,425) + (\$15,863) = \underline{\underline{\$55,288}}$$

2.May 1, 2005

The percent of the bond issue retired is 40 percent (\$20,000/\$50,000). On this date, 5 years and 8 months, or 68 months, remain in the bond term

Interest expense (.04) (4/12) (.40) \$55,288 -----295

Premium on bonds payable -----105*

Interest payable \$1,500(4/6)(.40) -----400

* \$105 = \$394(4/6) (.40)

Bond issue expense \$2,000 (4/111)(.40) -----29

Bond issue costs -----29

Bonds payable -----20,000

Premium on bonds payable -----2,010*

Interest payable -----	400
Cash 1.08(\$20,000) -----	+21,600
Bond issue costs -----	490**
Extraordinary gain, bond retirement-----	320
* \$2,010 = \$5,288 (.40) -\$105	
** \$490 = \$2,000 (68/111)(.40)	

2.5 ACCOUNTING FOR SERIAL BONDS

A **serial bond** issue matures in a series of installments rather than in one maturity amount. The advantages of serial bonds to the issuer include

- Reduced need for a sinking fund
- Less perceived risk
- Improved marketability
- Less burdensome debt retirement schedule.

Serial bonds are sold either as separate issues or as one aggregate issue. If the bonds are sold separately, it is possible to identify the yield rate on each, which normally increases with the length of the term to compensate for increased risk. An aggregate bond issue carries a single average yield rate. Either way, the price of serial bonds is the sum of the present value of each issue using the appropriate yield rate.

Three methods of accounting for premium and discount amortization on serial bonds are available.

1. Interest Method: If the yield rate on each issue is known, each issue is treated as individual bond issue. If not, the entire issue is treated as one bond issue, and the average yield rate is used to recognize interest. The book value of serial bonds payable is reduced by the face amount of serial bonds retired at each maturity date. Otherwise, procedures for amortizing discount and premium under the interest method are identical to those for ordinary bonds.

2. Straight-line method: An equal amount of premium or discount is allocated to each reporting period for each separate issue. Then the amounts for each issue are totaled by reporting period. Total amortization for a reporting period reflects each separate issue

outstanding that period. This method is permitted only if it produces results not materially different from those of the interest method.

3. Bonds outstanding method: The discount or premium for each separate issue need not be identified under this method. A constant rate of discount or premium per dollar of bond outstanding per period is used for amortization. This is a modified straight-line method that is permitted only if it produces results not materially different from those of the interest method.

All three methods relate the premium or discount to the total face value of bonds outstanding during the period. This amount decreases by the face value of each maturity issue. Consequently, relative to an ordinarily bond, discounts and premiums are amortized on an accelerated basis.

The application of the straight-line and interest methods to serial bonds is equivalent to that for single-maturity bonds. The bonds outstanding method, a variation of the straight-line method, provides a convenient shortcut to computing amortization of premium and discount and produces similar results. We illustrate the bonds outstanding method in the following example. A short bond term simplifies the illustration.

Example: Meseret Company issues \$100,000 of 8 percent serial bonds on January 1, 2001. The bonds are sold as one issue to yield 10 percent, resulting in proceeds of \$96,410 (this amount may be verified through the usual bond price calculation). The bonds pay interest each December 31 and mature according to the following schedule.

Maturity date	Maturity amount
January 1, 2002 -----	\$20,000
January 1, 2003 -----	50,000
January 1, 2004 -----	<u>30,000</u>
	<u>\$100,000</u>

January 1, 2001 - *Issue serial bonds:*

Cash -----	96,410
Discount on Serial bonds -----	3,590
Serial bonds payable -----	100,000

The amount of discount allocated to each reporting period under the bonds outstanding method is the product of three amounts:

1. A constant rate of amortization per dollar of bond per period.
2. The dollar amount of bonds outstanding (at face value) during the period.
3. The length of the period.

A table is used to develop the rate the amortization;

Face Value of Bonds		
Outstanding during	Rate of Discount Amortization per	
2001 ----- \$100,000	Dollar of Face value per year	
2002 ----- 80,000*	$\frac{\text{Initial discount}}{\text{Sum of bonds outstanding}} = \frac{\$3,590}{\$210,000} = \$.0171$	
2003 ----- <u>30,000</u>		
Sum ----- <u>\$210,000</u>		

* On January 1, 2002, \$20,000 of bonds mature; therefore, \$80,000 of bonds are outstanding during 2002.

The amortization rate indicates that \$.0171 of discount is associated with each dollar of bond face value each year in the term of the serial bonds. Selected entries follow:

December 31, 2001 – *Interest payment:*

Interest expense -----9,710

Discount of serial bonds $(.0171 \times \$100,000 \times 1 \text{ year})$ -----1,710

Cash $(.08 \times \$100,000)$ ----- 8,000

January 1, 2002 – *Retire bonds due 1/1/02:*

Serial bonds payable -----20,000

Cash -----20,000

Now assume that on January 1, 2002, Meseret also retires \$10,000 of the issue scheduled to mature January 1, 2004, on the open market at 99.

January 1, 2002-Retire \$10,000 of the \$30,000 of the bonds due 1/1/04 at 99.

Serial bonds payable -----10,000

Extraordinary loss, bond extinguishments -----242

Discount on bonds payable -----342*

Cash $(.99 \times \$10,000)$ ----- 9,900

$*(.0171 \times \$10,000 \times 2 \text{ years remaining in the bond term}) = \342

December 31, 2002 – *Interest payment:*

Interest expense -----6,797

Discount on serial bonds $(.0171 \times \$70,000 \times 1 \text{ year})$ -----1,197

Cash $(.08 \times 70,000)$ -----5,600

The amortization rate can be applied to any amount of face value or any period length. For example, if \$10,000 of the bonds scheduled to mature January 1, 2004, are retired March 1, 2002, rather than on January 1, 2002, the amount of discount to be removed from the accounts is \$314 $(.0171 \times \$10,000 \times 1 \frac{10}{12} \text{ years})$.

The complications arising when serial bonds are issued during a fiscal year are minimized by the bonds outstanding method. For example, assume that \$100,000 of serial bonds are issued March 31, 2001, at a premium and that the amortization rate is \$.02. If \$25,000 of bonds mature on March 31, 2002, the total amount of premium amortized during 2002 is \$1,625:

$$(.02 \times \$100,000 \times 3/12) + (.02 \times \$75,000 \times 9/12) = \$1,625$$

? What are the advantages of serial bonds to the issuer?

2.6 TROUBLED DEBT RESTRUCTURINGS

Rising interest rates, nonperforming loans, unsatisfactory return on investment, and lack of demand for a firm's products and services may contribute to troubled debt.

Rather than write off nonperforming loans or pursue legal action, creditors frequently agree to a debt restructure, allowing the debtor to remain in operation in the hope that the debtor can resolve its financial difficulties.

Creditors usually receive more on restructured debt than through bankruptcy by the debtor.

Typical provisions of restructure agreements include elimination or reduction of interest and principal payments, reduction of interest rates, extension of terms, and partial or complete settlement of the debt through cash payment or transfer of equity securities. In a troubled debt restructure (TDR), the creditor grants a concession to the debtor that it would not otherwise consider.

A troubled debt restructuring may be achieved in either of two ways:

1. The debt may be settled at the time of the restructuring.
2. The debt may be continued, but with a modification of terms

Settlement of Debt: A transfer of noncash assets (real estate, receivables, or other assets) or the issuance of the debtor's stock can be used to settle a debt obligation in a troubled debt restructuring.

In these situations, the non-cash assets or equity interest given should be accounted for at their fair market value. The debtor is required to determine the excess of the carrying amount of the payable over the fair value of the assets or equity transferred (gain). Likewise, the creditor is required to determine the excess of the receivable over the fair value of those same assets or equity interests transferred (loss). The debtor recognizes an extraordinary gain equal to the amount of the excess, and the creditor normally would change the excess (loss) against Allowance for Doubtful Accounts. In addition, the debtor recognizes a gain or loss on disposition of assets to the extent that the fair value of those assets differs from their carrying amount (book value).

An ordinary gain or loss on disposition of assets should be recorded as shown in the example below.

Note that: an asset is adjusted to fair value prior to recording its exchange for a debt.

Example: NIB Bank agrees to settle ABC Company's \$30 million debt in exchange for property having a fair market value of \$20 million. The carrying amount of the property (land) on ABC's books is \$17 million:

(\$ In millions)	
Land (\$20 million minus \$17 million) -----	3
Gain (ordinary) on disposition of assets-----	3
Note payable (carrying amount) -----	30
Gain (extraordinary) on troubled debt restructuring ----	10
Land (fair value) -----	20

Modification of Terms: In some cases, a debtor will have serious short-cut cash flow problems that lead it to request one or a combination of the following modifications:

1. Reduction of the stated interest rate.
2. Extension of the maturity date of the face amount of the debt.
3. Reduction of the face amount of the debt.
4. Reduction of deferral or any accrued interest.

When only a portion of the debt is settled, the terms of the remaining portion may be modified.

Illustration: Assume that XYZ Corporation has the following troubled debt on December 31, year 10:

Note payable, 12% due December 31, year 11 -----\$5,000,000

Interest payable ----- -\$600,000

On December 31, year 10 the troubled debt was restructured as follows:

1. The creditor forgave \$500,000 of the note principal and the \$600,000 of interest payable.
2. The maturity date was extended to December 31, year 15.
3. The interest rate was reduced from 12% to 8%, payable annually.

Required: Indicate the entry, which show the troubled debt restructuring, interest expense, and the payment on December 31, year 15.

Interest payment for the next 5 years: -----\$1,800,000

$(\$4,500,000 \times 8\% \times 5)$

Balance of Debt (\$5,000,000 - \$500,000) ----- \$4,500,000

Total future cash payments

under the new term----- \$6,300,000

The excess of the total payments over the carrying amount of the debt (\$6,300,000 - \$5,600,000 = \$700,000) is recognized as interest expense.

XYZ Corporation records the troubled debt restructuring, interest expense, and the payment on December 31, year 15, as follows:

Note payable -----5,000,000

Interest payable -----600,000

Discount on Restructured N/payable -----700,000

Restructured N/payable -----6,300,000

(\$4,500,000 +\$1,800,000)

To record restructuring of troubled debt on December 31, year 10, including reduction in interest rate from 12% to 8%.

Interest expense -----700,000

Discount on Restructured N/payable -----700,000

To recognize interest expense for the 5 years ended

December 31, year 15

Restructured N/payable -----6,300,000

Cash -----6,300,000

To record payment of principal and interest on

December 31, year 15.

However, if the interest rate had been reduced from 12% to 4%, payable annually, the total future cash payments under the new terms would be \$5,400,000(principal of \$4,500,000 and interest of \$900,000 for 5 years at 4%), which is \$200,000 less than the \$5,600,000 pre-restructuring carrying amount of the troubled debt. In this case, the debtor would record the troubled debt restructuring (including a gain of \$200,000) and the subsequent payments as follows:

Net payable -----5,000,000

Interest payable -----600,000

Restructured N/payable (including

interest of \$900,000 for 5 years) -----5,400,000

Gain on Restructuring of troubled debt----- 200,000

To record restructuring of the troubled debt on December 31, year 10,

including reduction in interest rate from 12% to 4%

Restructured N/payable -----900,000

Cash -----900,000

To record payments of interest

Restructured N/payable -----4,500,000

Cash -----4,500,000

To record payment of principal on December 31, year 15.

Troubled debt restructurings may take many forms and involve complex accounting issues. The foregoing examples were designed to illustrate relatively simple modifications of terms without any cash or other consideration being issued to the creditor in the debt restructurings.

2.7. Long-Term Debt in the Balance Sheet

All long-term debt should be described in the balance sheet or in a note to the financial statements. Business enterprises having large amounts of long-term debt in the form of numerous issues often show only one amount in the balance sheet and support this with a note to the financial statements that presents the details of maturity dates, interest rates, call provisions, conversion features, asset pledged as collateral, and limitations on dividends or other restrictions imposed on the issuer.

The Financial Accounting Standards Board requires disclosure of the combined aggregate amount of maturities and any sinking fund requirements of all long-term borrowings for each of the five years following the balance sheet date. Also, the FASB requires substantial disclosures regarding troubled debt restructurings.

Any portion of long-term debt that matures in one year is listed as a current liability, unless the retirement of the debt will not require the use of current assets. If, during the ensuring year, long-term debt is expected to be converted to common stock, refunded, or repaid from a sinking fund, there is no reason to change its classification to a current liability. However, the expected method of retirement should be disclosed

Activity- 6

At January 1,2000, Bahir Dar Textile Factory was indebted to Commercial Bank of Ethiopia under a Birr 240,000 10% unsecured note. The note was signed January 1, 1996, and was due December 31, 2001. Annual interest was last paid on December 31, 1998. Bahir Dar Textile Factory was experiencing severe financial difficulties and negotiated a restructuring of the terms of the debt agreement. Commercial Bank agreed to reduce last year's interest and the remaining two years' interest payments to Birr 11,555 each and delay all payments until December 31,2001, the maturity date.

Required: Prepare the journal entries for Bahir Dar Textile Factory necessitated by the restructuring of the debt at:

1. January 1,2000
2. December 31, 2001

You can compare your answer for activity- 6 with the following

Interest for 3 years (Birr 11, 555×3) -----Birr 34,665

Balance of debt ----- 240,000

Total future payments under the new term-----Birr 274,665

Restructured Notes payable -----Birr 274,665

Less: Carrying amount of

Pre-restructuring debt (240,000+24,000*) -----264,000

Discount on Restructured Notes payable -----Birr 10,665

* Interest payment for 1999(240,000×10%)

1. January 1, 2000

Notes payable -----240,000

Interest payable -----12,445

Interest Expense -----11,555

Discount on Restructured Notes payable -----10,665

Restructured Notes payable----- 274, 665

(To record the restructuring of the debt.)

2. December 31, 2001

Interest expense -----10,665

Discount on Restructured Notes payable -----10,665

(To recognize the interest expense)

Restructured Notes payable -----274,665

Cash -----274,665

(To record the payment of principal and interest)

Summary of the Chapter

1. Long-term debt consists of probable future sacrifices of economic benefits arising from present obligations that are not payable within a year or the operating cycle of the business, whichever is longer.
2. Three basic principles are used for valuing long-term debt. The recorded value of the date of issuance is the present value of all future cash flows discounted at the current market rate of interest for debt securities of equivalent risk. Interest expense is the product of the market rate at issuance and the balance in the liability at the beginning of the reporting period. And the book value of long-term debt at a balance sheet date is the present value of all remaining cash payments required, using the market rate at issuance.
3. Bonds are long-term debt instruments that specify the face value period at maturity and the stated interest rate payable according to a fixed schedule. A significant source of capital for many firms, different forms of bonds appeal to different investor preferences.
4. The price of a bond at issuance, which excludes accrued interest at the stated rate, is the present value of all future cash flows discounted at the current market rate of interest for bonds of a similar risk class.
5. Bonds are sold at a premium if the stated rate exceeds the market rate and at a discount if the reverse is true. Bond premiums and discounts are amortized over the remaining life of the security under the straight line method or the interest method (which is preferable because it is based on present-value concepts).
6. Accounting for bonds depends on the bond's particular features. Bonds issued between interest dates require payment of accrued interest by the investor and calculation of the bond price using present-value techniques.
7. Certain long-term debt instruments are issued with equity rights, including bonds issued with detachable stock warrants and convertible bonds. The equity feature is recorded by the issuer only if a separate market exists for the equity feature. Convertible bonds are accounted for by the issuer in the same way as nonconvertible bonds until they are converted because the conversion feature cannot be valued reliably.
8. Extinguishment of debt is accomplished by paying the creditor or replacing the debt with another debt instrument or by obtaining a legal release or a release from the creditor.

9. The gain or loss from extinguishment, which is the difference between the market value of consideration used for extinguishment and the book value of debt extinguished, is classified as extraordinary.
10. Serial bonds mature in a series of installments rather than in one maturity amount and they are sold either as separate issues or as one aggregate issue.

Self-Assessment Questions

Part I: Say True or False

1. When bonds are issued between interest dates, the portion of the proceeds that represents interest accrued from the date of the bond contract up to the issue date should be recorded by the issuer as interest payable.
2. Interest expense over the term of bonds is always equal to the total cash interest paid.
3. The straight-line method and the interest method of amortizing discounts or premiums on bonds provide the same amount of total interest expense over the term of the bonds.
4. Bond issue costs may be deferred and amortized to expense over the period from the issue date to the maturity date.
5. The debtor should always recognize a gain at the date of a troubled debt restructuring.

Part II: Multiple Choices

1. The issue price of a bond is equal to
 - a) The face value of the bond
 - b) The face value of the bond and the present value of the periodic interest payments discounted at the market rate of interest at the issue date.
 - c) The present value of the face value of the bond and the periodic interest payments discounted at the market rate of interest at the issue date.
 - d) The present value of the face value of the bond and the periodic interest payments discounted at the stated rate of interest.
2. When the market rate of interest is lower than the stated rate of interest, bonds are issued:
 - a) at a premium
 - b) at face value
 - c) at a discount
 - d) None
3. When bonds are extinguished or retired before maturity, the difference between the reacquisition price and the book value of the bonds retired should be:

- a) Deferred and amortized to interest expense over the remaining term of the now retired bonds.
 - b) Recognized currently as an extraordinary gain or loss.
 - c) Reported in the financial statements as a prior period adjustment of beginning retained earnings.
 - d) Recorded as contributed capital from retirement of bonds.
4. MOENCO Company incurred costs of \$6,600 when it issued, on August 31, 1995, 5 year term bonds dated April 1, 1995. What amount of bond issue expense should MOENCO report in its income statement for the year ended December 31, 1995?
- a) \$440
 - b) \$480
 - c) \$990
 - d) \$6,600
5. A bond issued on June 1, 2000, has interest payment dates of April 1 and October 1. Bond interest expense for the year ended December 31, 2000, is for a period of
- a) Three months
 - b) Four months
 - c) Six months
 - d) Seven months

CHAPTER FOUR: LONG-TERM INVESTMENTS

INTRODUCTION

Suppose senior management at your employer, Ambassel Trading, asks for your advice on the following accounting matter. Ambassel Trading had cash available at the beginning of the current fiscal year that was not needed for operating or to acquire fixed assets, so it purchased 10,000 shares of NIB bank Common stock at Br. 20, per share. At the end of the year, NIB bank reported earnings of Br. 3 per share and paid dividends of Br. 1 per share. NIB bank's common stock is traded in the market, and at the end of the fiscal year has a market price of Br. 24 per share.

Management asks for your advice on

- a) what amount Ambassel Trading should report on its balance sheet for its investment in NIB bank and
- b) What amount Ambassel Trading should report as income in the current year from its investment in NIB bank.

Dear Colleague, your response to the senior management may be based on the nature of the investment. For some investors, the investments in financial instruments issued by other companies represent ongoing affiliations with the companies whose securities are acquired. Other investments, though, are made not to obtain a favorable business relationship with another firm but simply to earn a return from the dividends or interest the securities pay or from increases in the market price of the securities.

With such diversity in investment objectives, it is understandable that not a single accounting method is adequate to report every investment. As you will discover when reading this chapter, investments are accounted for in different ways, depending on the nature of the investment relationships.

Learning Objectives:

Upon completion of this chapter, you will be able to:

- Understand classification criteria and the initial recording of investment securities at the date of acquisition.
- Know the conceptual basis for the accounting treatment of various types of investments.
- Account for common stock investments using the cost method, and describe the circumstances under which the cost method should be used.
- Account for common stock investments using the equity method , and describe the circumstances under which the equity method should be used.
- Appreciate why firms invest in debt and equity securities.
- Understand how to account for stock dividends, stock splits, and stock warrants received by the investor.

4.1.INVESTMENTS IN FINANCIAL INSTRUMENTS

Temporary investment of idle cash: Companies invest in the securities of other companies and government agencies for a variety of reasons. Companies often have cash on hand that is not needed at present but needed in the near future. Rather than allowing the idle cash to remain in a non interest-bearing account, companies find temporary investments where they can earn a return. These investments are usually low risk and can be quickly and easily converted to cash.

These short- term investments are often in the securities of federal, state, and local government agencies but can also be in the securities of other companies.

Long-term investments to increase earnings: A second reason firms invest in the securities of other firms, especially in securities representing ownership interest, is to develop a beneficial inter company relationship that will increase the profitability of the investing company, both directly and indirectly.

4. 1. 1. Accounting Issues

There are three broad issues in accounting for investments

- 1) Classification issues
- 2) Valuation and investment income measurement issues
- 3) Disclosure issues.

Classification issues: Classification involves management's intended holding period for an investment. Is it a temporary investment because it would otherwise be idle cash or is it a long-term investment? If it is a long-term investment in a debt security, does management intend to hold the investment until the debt matures? Classification is important because different accounting valuation methods are used for different classifications.

Valuation and Investment Income Measurement: Various valuation methods are used to determine the carrying value of investments, and this determination in turn affects the measurement of income and owners' equity. In addition to the other valuation methods, the new valuation method, fair value, is used to value investments in certain classifications. Because using fair value as a valuation method results in increasing or decreasing the carrying value of investments by the amount of the holding gains and losses associated with the investments, there are consequences for income measurement. Should these holding gains and losses be included in income, or should they be treated as a separate increase or decrease to owners' equity until the investment is sold and they are realized?

Disclosure: Since different classifications of investments are accounted for differently, there are differing disclosure requirements for each.

1. 1. 2. Long-Term Investments in Securities

Long-term investments: are investments that do not meet the two requirements for short-term investments. This means long-term investments include investments in bonds and stocks that aren't marketable or, if marketable, aren't intended to be converted in to cash in the short term.

Long-term investments also include funds earmarked for a special purpose. Examples are bond sinking funds and investments in land or other assets not used in the company's operations.

Long-term investments are reported in the non current section of the balance sheet, often in its own separate section titled Long-Term Investments.

A security: is a share, participation, or other interest in the property or assets of the issuer, or an obligation of the issuer, that

- 1) is represented by an instrument issued in bearer or registered form or is registered in records maintained to record transfers to and from the issuer.
- 2) is of a type commonly dealt with on stock exchanges or is an instrument that is commonly recognized as a medium for investment.
- 3) either is one of a class or series of shares, participations, interests, or obligations, or by its terms, is divisible into such a class or series.

Securities are either debt securities or equity securities.

A **debt security** is any security representing a creditor relationship with an entity. Common examples of debt securities include US Treasury securities, municipal securities, corporate bonds, convertible debt, and commercial paper. Preferred stock that must be redeemed or that is redeemable at the option of the investor is also classified as a debt security. Trade accounts receivable and loan receivables arising from consumer, commercial and real estate lending activities are not debt securities; they do not meet the definition of a security.

An **equity security** is any security representing an ownership interest in an entity, or the right to acquire or to dispose of an ownership right at a fixed price. Common examples of equity securities include common, preferred, and other capital stock.

Warrants, rights, and options to purchase (call options) or to sell (put options) equity securities at fixed or determinable prices are also classified as equity securities.

Activity- 1

1- Give at least two examples of assets classified as long-term investments.

2-What are the requirements for a security to be classified as a long-term investment?

You can compare your answer for activity- 1 with the following:

1. Long-term investments include funds earmarked for a special purpose, bonds and stocks that do not meet the requirements of current assets, and other assets that are not used in the regular operations of the business.
2. A stock investment is classified as a long-term investment if it is not marketable or, if marketable, it is not held as an available source of cash to meet the needs of current operations.

4.1.2. ACCOUNTING FOR LONG-TERM INVESTMENTS IN EQUITY SECURITIES.

Dear colleague, I think you are now aware of what long-term investment is. Well, you can also easily understand the decision process for deciding how to account for investments from the flow diagram show in Exhibit 1.1.

The first question to be answered is, what amount of influence does the investor company have over the investee company? This is generally determined by assessing the percentage of voting rights the investor company has of the total voting rights outstanding for the investee company.

An investor is the one which invests

There are three levels of control or influence that an investor company can have over an investee company:

1. **Controlling interest.** A controlling interest is represented by an investment in which the investor owns more than 50 percent of the voting stock of the investee. The investor has absolute control over the investee.

The investor corporation is referred to as the **parent** and the investee as the **subsidiary**. For financial reporting, **consolidated financial statements** are generally prepared. The financial statements of the two corporations are combined into one as if they were one economic entity, with the interest of share holders of the investee other than the investor reported as a special item called minority shareholder interest, you will learn when and how to prepare consolidated financial statements in advanced accounting course.

2. **Significant influence.** A Significant influence is represented by an investment in equity securities in which the investor holds from 20 percent to 50 percent of the voting stock of the investee, although these are not hard and fast percentages. Investments in this category are accounted for using the equity method.
3. **No significant influence.** Investments in equity securities in which the investor holds less than 20 percent of the voting stock of the investee generally do not significantly influence the investee. When the investor company does not have significant influence, the next question is whether the fair value of the security is readily determinable

? What are the alternative methods used in accounting for investments in equity securities?

4. 2. 1. Acquisition cost

The cost of an investment in securities includes the acquisition price plus brokerage fees and any other expenditure incurred in the transaction. If assets other than cash are given in payment for the

securities and the current fair value of such noncash assets is unknown, the current market price of the securities may be used to establish the cost of the securities acquired and the value of the noncash assets given in exchange. When neither a market price for the securities nor the current fair value of the assets given in exchange is known, accountants may rely on independent appraisals to establish values for recording the transaction.

If two or more securities are acquired for a lump sum, the total cost should be allocated among the various securities. If the various securities acquired are publicly traded, the existing market prices serve as the basis for apportionment of the total cost. This type of cost apportionment is termed **relative market value allocation**.

For example, assume that X company acquires from Y company 100 units of five shares of common stock and one share of preferred stock each, at a price of \$240 a unit, when the common stock is trading at \$30 and the preferred stock at \$100 a share.

The portion of the cost allocated to the common stock is $\$24,000 \times \frac{150}{250} = \$14,400$, and

The portion allocated to the preferred stock is $\frac{100}{250} \times 24,000 = \$9,600$

* the price of one unit of five shares of common stock

(\$30 × 5)\$ 150

The price of one unit of

One share of preferred stock \$100

Current Market Price\$250

If only one class of the stock is publicly traded, that class usually is recorded at its market value, and the remaining portion of the cost is considered as the cost of the other class.

When either class of stock trades in the open market, the apportionment of the cost may have to be delayed until current fair values or market values of the securities are established.

4. 2 .2. Measuring Return on an investment

What is the “**return**” on an investment in common stock?

- One point of view is that investor’s return consists of the stream of dividends received from the investment.
- A second point of view is that the investor’s return consists of a proportionate share of the net income (minus preferred dividends, if any) of the investee, without regard to whether this income is distributed in the form of dividends during the accounting period. Supporting this point of view is the fact that the earnings of the investee that are not distributed as dividends are retained by the investee, with a resultant increase in the investee’s stockholders’ equity.
- A third interpretation of the investor’s return consists of the dividends received plus (or minus) the change in the market value of the investment.

4. 2. 3. Holdings of Less than 20%

Dear colleague, as we discuss it earlier, when an investor has an interest of less than 20% of the total outstanding common stock of an investee, it is presumed that the investor has little or no influence over the investee. In this case, the investor cannot influence the investee’s dividend policy and either the fair value method or the cost method is used to value the investment.

Fair value Method

If market prices are available, the investment is valued and reported subsequent to acquisition using the fair value method. The fair value method requires that companies classify equity securities at acquisition as **available- for- sale securities** or **trading securities**.

Because equity securities have no maturity date, they cannot be classified as held-to-maturity

Available-for-sale securities (SAS)

Securities available-for-sale (SAS) when acquired are recorded at cost

To illustrate, assume that on January 3, 1999, ABC Company purchased common stock of three companies, each investment representing less than a 20% interest:

	Cost
X- Company	\$259,700
Y-Company	317,500
Z-Company	<u>141,350</u>
Total Cost	<u>\$718,550</u>

These investments would be recorded as follows:

Jan. 3, 1999	Investment in SAS	..... 718, 550
	Cash	..... 718, 550

On December 6, 1999 ABC Company receives a cash dividend of \$4,200 on its investment in the common stock of Y-company.

The cash dividend is recorded as follows:

Dec.6, 1999	Cash	.....4, 200
	Dividend Revenue	..... 4, 200

All three of the investee companies reported net income for the year but only Y-company declared and paid a dividend to ABC Company. But, as indicated before, when an investor owns less than 20% of the common stock of another corporation, it is presumed that the investor has relatively little influence on the investee. As a result, net income earned by the investee is not considered as a proper basis for recognizing income from the investment by the investor. The reason is that the investee may choose to retain for use in the business increased net assets resulting from profitable operations. Therefore, net income is not considered earned by the investor until cash dividends are declared by the investee.

At December 31, 1999 ABC's available- for-sale equity security portfolio has the following cost and fair value:

Available-for-sale Equity Security Portfolio

December 31, 1999

Investments	Cost	Fair value	Unrealized gain (loss)
X-Company	\$259,700	\$275,000	\$15,300
Y- Company	317,500	304,000	(13,500)
Z-Company	<u>141,350</u>	<u>104,000</u>	<u>(37,350)</u>
Total of portfolio	<u>\$718,550</u>	<u>\$683,000</u>	(35,550)

Previous securities fair value

adjustment balance - 0-

Securities fair value adjustment- Cr. \$(35,550)

For ABC's available-for-sale equity securities portfolio the gross unrealized gains are \$15,300 and the gross unrealized losses are \$50,850 (\$13,500 +\$37,350), resulting in a net unrealized loss of \$35,550. The fair value of the available-for-sale securities portfolio is \$35,550 less than its cost.

As with available-for-sale debt securities, the net unrealized gains and losses related to changes in the fair value of available-for-sale equity securities are recorded in an Unrealized Holding Gain or Loss-Equity account that is reported as a part of other comprehensive income and as a component of stockholders' equity until realized. In this case, ABC Company prepares an adjusting entry debiting the Unrealized Holding Gain or Loss-Equity account and crediting the Securities Fair Value Adjustment account to record the decrease in fair value and to record the loss as follows:

Dec.31, 1999 Unrealized Holding Gain or Loss-Equity 35,550

Securities Fair Value Adjustment-SAS 35,550

On March 10, 2000, ABC Company sold all of its X-company common stock receiving net proceeds of \$287,220. The realized gain on the sale is computed as follows:

Net proceed from sale	.....\$287, 220
Cost of X company shares	.....(<u>259.700</u>)
Gain on sale of stock	.....<u>\$27,520</u>

The sale is recorded as follows:

March 10, 2000	Cash -----	287,220
	Investment in SAS	259,700
	Gain on sale of stock	27,520

In addition, assume that on June 13, 2000, ABC Company purchased 20,000 shares of C-Company at a market price of \$12.75 per share plus brokerage commissions of \$1,850 (total cost, \$256,850).

On December 31, 2000, ABC's portfolio of available-for-sale securities is as follows:

Available-for-sale Equity Security portfolio

December 31, 2000

Investments	Cost	Fair value	Unrealized Gain(loss)
C-Company	\$256,850	\$278,350	\$21,500
Y-Company `	317,500	362,550	45,050
Z-Company	<u>141,350</u>	<u>139,050</u>	<u>(2,300)</u>
Total portfolio	<u>\$715,700</u>	<u>\$779,950</u>	64,250
Previous securities fair value			
adjustment balance –Cr.			<u>(35.550)</u>
Securities fair value adjustment –Dr			<u>\$99,800</u>

At December 31, 2000, the fair value of ABC's available-for-sale equity securities portfolio exceeds cost by \$64, 250 (unrealized gain). The Securities Fair Value Adjustment account had a credit balance of \$35,500 at December 31, 1999. To adjust ABC's December 31, 2000, available for-sale portfolio to fair value requires that the Securities Fair Value Adjustment account be debited for \$99,800 (\$35,550+\$64,250). The entry to record this adjustment is as follows:

Dec. 31, 2000	Securities Fair Value Adjustment (SAS).....	99, 800
	Unrealized Holding Gain or Loss-Equit	99,800

Trading Securities

The accounting entries to record trading equity securities are the same as for available-for-sale equity securities except for recording the unrealized holding gain or loss. For trading equity securities, the unrealized holding gain or loss is reported as part of net income. Thus, the account title Unrealized Holding Gain or Loss-Income is used. When a sale is made, the remainder of the gain or loss is recognized in income.

Activity - 2

On April 5, 2003, Berchaco Ethiopia Purchases a basket of Securities Consisting of 5,000 shares of Dashen Bank common stock and 1,000 shares of Ethiopian Insurance Company, 5 percent, \$100 par value preferred stock for a lump sum payment of \$132, 000 not including a commission of \$1,000. At the date of the purchase, Dashen Bank common stock sell for \$12 per share and Ethiopian Insurance Company preferred stock sells for \$80 per share.

1- How do you allocate the \$133,000 total cost between the securities acquired using the relative market value method?

2- Assume that Management classifies these investments as securities available- for- sale. So, show how the company records the acquisition of the investment in securities.

 3- If the securities were to be classified as trading securities; show how the company records the acquisition of the investment in securities.

You can compare your answer for activity 2 with the following

		Market			Allocation	
		Shares	price	Market	Proportion of	of purchase
<u>Security</u>		<u>Acquired</u>	per	<u>value</u>	<u>market value</u>	<u>price</u>
		<u>share</u>	<u>share</u>			
Dashen	Bank	5,000	\$12	\$60,000	\$60,000/\$140,000(×133,000)	= \$57,000
Common stock		1,000	80	<u>80,000</u>	\$80,000/\$140,000(×133,000)	<u>= 76,000</u>
EIC, preferred stock				<u>\$140,000</u>		<u>\$133,000</u>

2. Investment in SAS: Dashen Bank Common stock -----57,000

Investment in SAS: EIC, preferred stock -----76,000

Cash-----133,000

3. If the securities were to be classified as trading securities, the entry would be the same except that in each case, the individual investments would be classified as investments in TS.

Cost Method

When market prices are not available, the investment is valued and reported at cost in periods subsequent to acquisition. This approach is often referred to as the cost method.

When the cost method of accounting is used, the investment ledger account is maintained in terms of the cost of the common stock acquired. Revenue is recognized by the investor only to the extent of dividends received. However, if a material portion of the dividends received represents a distribution of investee's earnings realized prior to the time the stock was acquired, that portion of the dividends is a return of capital (a liquidating dividend), not revenue.

For example, Assume that X Company acquired 15% of the outstanding common stock of Y Company, early in year 1. During year 1, Y Company reported net income of \$100,000 and paid a cash dividend of \$150,000. Because the dividend exceeded by a material amount the net income of Y for the period X owned Y common stock, X records the dividend as follows:

Cash ($\$150,000 \times 0.15$)	.....	22,500
Dividend revenue	.....	15,000
Investment in Y Co., Common Stock	.....	7,500

To record receipt of dividend, including distribution of \$7,500 in
excess of net income since the investment was acquired.

Changes in the net assets of the investee are disregarded unless a significant and permanent impairment of value of the investment occurs. Finally, long-term investment in marketable equity securities may be written down to a lower of cost or market.

1. 2. 4. Holdings Between 20% and 50%

Although an investor corporation may hold an interest of less than 50% in an investee corporation and thus not possess legal control, its investment in voting stock gives it the ability to exercise significant influence over operating and financial policies of an investee.

The ability to exercise influence may be indicated in several ways. Examples would be: representation on the board of directors, participation in policy-making processes, material intercompany transactions, interchange of managerial personnel, or technological dependency.

Another important consideration is the extent of ownership by an investor in relation to the concentration of other shareholdings. However, substantial or majority ownership of the voting stock of an investee by another investor doesn't necessarily preclude the ability to exercise significant influence by the investor.

Generally, investments representing 20% or more of the voting stock of an investee usually are accounted for by the equity method of accounting.

Equity Method

Under the **equity method**, a substantive economic relationship is acknowledged between the investor and the investee.

The investment is originally recorded at the cost of the shares acquired but is subsequently adjusted each period for changes in the net assets of the investee. That is, the investment's carrying amount is periodically increased (decreased) by the investor's proportionate share of the earnings (losses) of the investee and decreased by all dividends received by the investor from the investee. The equity method recognizes that investee's earnings increase investee's net assets, and that investee's losses and dividends decrease these net assets.

To illustrate, assume that East African Group purchased 25% of the common stock of Nyala Insurance Company on January 1, 2004, for \$850,000 cash.

The acquisition was recorded at cost as follows:

1) Long-Term Investment in Nyala Insurance	850,000
Cash	850,000

Note that the investment is recorded in a separate account rather than in a portfolio account. Therefore, we will follow the practice of creating a separate account for every equity-method investment. For all other investments, a single account is used for the entire portfolio.

During 2004 Nyala Insurance Co. earned net income of \$124,400, 25% of which belongs to East African Group ($0.25 \times \$124,400 = \$31,100$). On November 1, Nyala Insurance declared and paid a cash dividend of \$60,000 (\$15,000 to East African Group).

- 2) Long-term investment in Nyala Insurance 31,100
 Income from investment in Nyala Insurance 31,100
- 3) Cash 15,000
 Long term investment in Nyala Insurance 15,000

Note that unlike the fair value method, the equity method recognizes income not when a cash dividend is declared and paid but when income is earned by the investee, as shown in entry (2). In 2004, East African Group recognizes as income its share (\$31,100) of the net income reported by Nyala Insurance and increases its investment account by that amount. The dividend paid by Nyala Insurance, recorded by entry (3), is a distribution of the income and therefore reduces the amount of East African Group's investment.

Assume also that Nyala Insurance Company reported a net loss of \$6,000 in 2005 and paid no dividends. Under the equity method; East African Group would recognize its share of the loss ($\$1,500 = 25\% \times \$6,000$) as follows:

- Loss from Investment in Nyala Insurance 1,500
- Long-term Investment in Nyala Insurance 1,500

Thus, East African Group's income statement would include a \$1,500 investment loss for 2005, and the balance of its investment in Nyala Insurance account would be reduced by \$1,500.

Equity method investments are carried on the balance sheet at acquisition cost plus the investor's share of the investee's income, less the investor's share of the investee's losses and dividends.

East African Group's 2004 financial statements would include the following items for its investment in Nyala Insurance Company.

Balance sheet

Long-term investment in Nyala Insurance

Company (Equity method) \$ 866, 100

Income statement

Income from investment in Nyala Insurance

Company (Equity method) \$ 31,100

Expanded Illustration of the Equity Method

Under the equity method, periodic investor revenue consists of the investor's proportionate share of investee's earnings (adjusted to eliminate inter company gains and losses) and amortization of the difference between the investor's initial cost and the investor's proportionate share of the underlying book value of the investee at date of acquisition. And, if the investee's net income includes extraordinary items, the investor treats a proportionate share of the extraordinary items as an extraordinary item, rather than as ordinary investment revenue before extraordinary items.

To illustrate, assume that on January 1, 1999, Investor Company purchased 250,000 shares of Investee company's 1,000,000 shares of outstanding common stock for \$8,500,000. Investee Company's total net worth or book value was \$30,000,000 at the date of Investor Company's 25% investment. Investor company thereby paid \$1,000,000 ($\$8,500,000 - 0.25(\$30,000,000)$) in excess of book value. It was determined that \$600,000 of this is attributable to its share of **undervalued depreciable assets** of Investee company and \$400,000 to **unrecorded goodwill**. Investor company estimated the average remaining life of the undervalued assets to be 10 years and decided up on a 40-year amortization period for goodwill (the maximum length of time allowed). For the year 1999, Investee Company reported net income of \$2,800,000 including an extraordinary loss of \$400,000 and paid dividends at June 30, 1999 of \$500,000 and at December 31, 1999 of \$900,000.

The following entries would be recorded on the books of Investor Company to report its long term investment using the equity method

January 1,	Investment in investee stock	8,500,000
1999	Cash	8,500,000

(To record the acquisition of 250,000 Shares
of Investee Company common Stock)

June 30,	Cash	125,000
1999	Investment in investee stock	125,000

[To record dividend received
($\$500,000 \times 0.25$) from investee company]

The entries on December 31, however, are more complex. In addition to the dividend received, Investor Company must recognize its share of Investee Company's income. Both an ordinary and extraordinary component must be recorded by Investor Company, because investee Company's income includes both. Furthermore, Investor Company paid more than the book value for an interest in Investee company's net assets. As a result, this additional cost must be allocated to the proper accounting period.

December 31,	Investment in investee stock	700,000
1999	Loss from investment (extraordinary)	100,000
	Revenue from investment (ordinary) ...	800,000

[To record share of Investee company ordinary
income ($\$3,200,000 \times 0.25$) and extraordinary
loss ($\$400,000 \times 0.25$)]

December 31, Cash.....	225,000	
1999	Investment in investee stock.....	225,000

[To record dividend received ($\$900,000 \times .25$)
from Investee Company]

December 31, Revenue from investment (ordinary)70,000

1999 Investment in investee stock70,000

(To record amortization of investment cost

in excess of book value represented by:

Undervalued depreciable assets - $\$600,000 \div 10 = \$60,000$

Unrecorded goodwill $-\$400,000 \div 40 = \underline{10,000}$

Total \$70,000

The investment in Investee Company is represented in the balance sheet of Investor Company at a carrying amount of \$8,780,000 computed as shown below:

Investment in Investee Company

Acquisition cost, 1/1/99\$8,500,000

Plus: Share of 1999 income before

extraordinary item800,000 \$ 9,300,000

Less: Share of extraordinary loss 100,000

Dividends received 6/30 and 12/31 350,000

Amortization of undervalued depreciable assets.....60,000

Amortization of unrecorded goodwill10,000 520,000

Carrying amount, 12/31/99 \$8,780,000

Investee Losses Exceed Carrying Amount

If an investor's share of the investee's losses exceeds the carrying amount of the investment, should the investor recognize additional losses? Ordinarily the investor should discontinue applying the equity method and not recognize additional losses.

If the investor's potential loss is not limited to the amount of its original investment (by guarantee of the investee's obligations or other commitment to provide further financial support), however, or if imminent return to profitable operations by the investee appears to be assured, it is appropriate for the investor to recognize additional losses.

4. 2. 5. Changing From and To the Equity Method

If the investor level of influence of ownership falls below that necessary for continued use of the equity method, a change must be made to the fair value method. And an investment in common stock of an investee that has been accounted for by other than the equity method may become qualified for use of the equity method by an increase in the level of ownership.

4. 2. 6. Disclosures Required Under the Equity Method

The significance of an investment to the investor's financial position and operating results should determine the extent of the disclosures. The following disclosures in the investor's financial statements generally apply to the equity method:

1. The name of each investee and the percentage of ownership of common stock.
2. The accounting policies of the investor with respect to investments in common stock
3. The difference, if any, between the amounts in the investment account and the amount of underlying equity in the net assets of the investee.
4. The aggregate value of each identified investment based on quoted market price (if available).
5. when investments of 20% or more interest are in the aggregate material in relation to the financial position and operating results of an investor, it may be necessary to present summarized information concerning assets, liabilities, and results of operations of the investees, either individually or in groups, as appropriate.

In addition, the investor is expected to disclose the reasons for not using the equity method in cases of 20% or more ownership interest and for using the equity method in cases of less than 20% ownership interest.

Activity- 3

Muger Cement Factory bought 40% of Dire Dawa Cement Factory's outstanding common shares on January 2, 2003, for \$540 million. The carrying amount of Dire Dawa Cement Factory's net assets (share holders' equity) at the purchase date totaled \$900 million. Book values and fair values were the same for all financial statement items except for inventory and buildings, for which fair values exceeded book values by \$ 25 million and \$225 million, respectively. All inventories on hand at the acquisition date were sold during 2003. The buildings have average remaining useful lives of 18 years. During 2003, Dire Dawa Cement factory reported net income of \$220 million and paid an \$80 million cash dividend.

Based on the above data try to:

- 1) Prepare the appropriate journal entries during 2003 for the investment.
- 2) Determine the amounts relating to the investment that Muger Cement Factory should report in the 2003 financial statements
 - ⇒ a) As an investment in the b/sheet
 - b) As investment revenue on the I/statement

Your answers for activity 3 should look like the one shown below:

1. the appropriate journal entries during 2003
for the investment are:

Purchase		(\$ in million)
Investment in Dire Dawa C.F. Shares	.....	540
Cash	.....	540
Net income		
Investment in Dire Dawa C.F. Shares (40%×\$220 million)	...	88
Investment Revenue	.....	88

Dividends

Cash ($40\% \times \$80$ million)32

Investment in Dire Dawa C.F. Shares 32

Inventory

Investment Revenue (higher cost of goods
sold during 2003 if beginning inventory had
been adjusted to fair value)10

Investment in Dire Dawa C.F. Shares ($40\% \times \$25$ million) 10

Buildings

Investment Revenue [$(\$225 \text{ million} \times 40\%) \div 18 \text{ years}$] 5

Investment in Dire Dawa C.F. Shares5

2. The amounts that Muger Cement should report in the 2003 financial statements;

a) As an investment on the balance sheet :

Investment in Dire Dawa Cement Shares

(\$ in Millions)

cost 540

share of

income 88 32 Dividends

10 Inventory

5 Buildings

Balance 581

b) As investment revenue on the income statement

$$\begin{array}{rcl} \$88 \text{ million} & - & [\$10 + \$5] \text{ million} \\ \text{(share of income)} & & \text{(adjustments)} \end{array} = \$73 \text{ million}$$

4.2. ACCOUNTING FOR LONG-TERM INVESTMENTS IN DEBT SECURITIES

Dear colleagues, so far, we have discussed about investments in equity securities and I think you have got a good understanding about what a long-term investment in equity securities is. Now, we will continue to discuss about investments in debt securities.

Debt securities are instruments representing a creditor relationship with an enterprise.

Investments in debt securities are grouped into three separate categories for accounting and reporting purposes.

These categories are as follows:

- 1. Held-to-maturity:** Debt securities that the enterprise has the positive intent and ability to hold to maturity
- 2. Trading:** Debt security brought and held primarily for sale in the near term to generate income on short term price differences
- 3. Available-for-sale:** Debt securities not classified as held-to-maturity or trading securities.

Exhibit.1-2 identifies these categories, along with the accounting and reporting treatments required for each

Amortized cost is the acquisition cost adjusted for the amortization of discount or premium, if appropriate. **Fair value** is the amount at which a financial instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

<u>Category</u>	<u>Valuation</u>	<u>Unrealized Holding Grains or losses</u>	<u>Other income effects</u>
Held-to-maturity	Amortized cost	Not recognized	Interest when earned; gains & losses from sale
Trading Securities	Fair value	Recognized in net income	Interest when earned; gains & losses from sale
Available-for-sale	Fair value	Recognized as other comprehensive income and as separate component of stock holders' equity.	

Exhibit.1–2 Accounting for debt securities by category

? What are the common examples of debt securities?

Held-to-Maturity Securities (HTM)

Only debt securities can be classified as held-to-maturity because, by definition, equity securities have no maturity date. A debt security should be classified as held-to-maturity only if the reporting entity has both (1) the positive intent and (2) the ability to hold those securities to maturity. A company should not classify a debt security as held-to-maturity if the company intends to hold the security for an indefinite period of time. Likewise, if the enterprise anticipates that a sale may be

necessary due to changes in interest rates, foreign currency risk, liquidity needs, or other asset-liability management reasons, the security should not be classified as held-to-maturity.

Held-to-maturity securities are accounted for at amortized cost, not fair value. If management intends to hold certain investment securities to maturity and has no plans to sell them, fair values (selling prices) are not relevant for measuring and evaluating the cash flows associated with these securities. Finally, because held-to-maturity securities are not adjusted to fair value, they do not increase the volatility of either reported earnings or reported capital as do trading securities and available-for-sale securities.

To illustrate, assume that XYZ Company purchased \$100,000 of 8% bonds of ABC company on January 1, 1998, paying \$92,278. The bonds mature January 1, 2003; interest is payable each July 1 and January 1. The discount of \$7, 722 (\$100,000 - \$92,278) provided on effective interest yield of 10%.

The entry to record the acquisition of the investment is;

January 1,	Investment in HTM Securities	92, 278
1998	Cash	92,278

Note: Investments acquired at par, at a discount, or at a premium are generally recorded in the accounts at cost, including brokerage and other fees but excluding the accrued interest; generally they are not recorded at maturity value. The use of a separate discount or premium account as a valuation account is acceptable procedure for investments but in practice it has not been widely used.

Investment in HTM securities account is used to indicate the type of debt security purchased. Discounts and premiums on long-term investments in bonds are amortized in a manner similar to discounts and premiums on bonds payable, we will discuss it in chapter two.

Exhibit.1–3 shows the effect of the discount amortization on the interest revenue recorded each period for the investment in ABC company bonds.

8% bonds Purchased to yield 10%

	Cash	Interest	Bond	Caring
<u>Date</u>	<u>Received</u>	<u>Revenue</u>	<u>Discount</u>	<u>Amount</u>
			<u>Amortization</u>	<u>of Bonds</u>
1/1/98				\$92,278
7/1/98	\$4,000^a	\$4,614^b	\$614^c	92,892 ^d
1/1/99	4,000	4,645	645	93,537
7/1/99	4,000	4,677	677	94,214
1/1/00	4,000	4,711	711	94,925
7/1/00	4,000	4,746	746	95,671
1/1/01	4,000	4,783	783	96,454
7/1/01	4,000	4,823	823	97,277
1/1/02	4,000	4,864	864	98,141
7/1/02	4,000	4,907	907	99,048
1/1/03	<u>4,000</u>	<u>4,952</u>	<u>952</u>	100,000
	<u><u>\$40,000</u></u>	<u><u>\$47,722</u></u>	<u><u>\$7,722</u></u>	

$$a_{\$4,000 = \$100,000 \times 0.08 \times 6 / 12}$$

$$b_{\$4,614 = \$92,278 \times 0.10 \times 6 / 12}$$

$$c_{\$614 = \$4,614 - \$4,000}$$

$$d_{\$92,892 = \$92,278 + \$614}$$

Exhibit.1-3: Schedule of Interest Revenue and Bond discount amortization-Effective Interest Method.

Note: the effective interest method is applied to bond investments in a fashion similar to that described for bonds payable.

The effective interest rate or yield is computed at the time of investment and is applied to its beginning carrying amount (book value) for each interest period to compute interest revenue. The investment carrying amount is increased by the amortized discount or decreased by the amortized premium in each period

The journal entry to record the receipt of the first semiannual interest payment of July 1, 1998 (using the data in Exhibit.1-3) is;

July 1,	Cash	4, 000
1998	Investment in HTM securities	614
	Interest Revenue	4, 614

Because XYZ Company is on a calendar year basis, it accrues interest and amortizes the discount at December 31, 1998, as follows:

December 31,	Interest Receivable	4,000
1998	Investment in HTM securities.....	645
	Interest Revenue	4,645

In addition, the interest and amortization amounts are provided in Exhibit.1-3.

XYZ Company would report the following items related to its investment in ABC bonds in its December 31, 1998 financial statements:

Balance sheet

Current assets:

Interest receivable	\$4,000
---------------------------	---------

Long-term investments:

Held-to-maturity securities, at amortized cost\$93,537

Income statement

Other revenues and gains:

Interest revenue \$9,259

The sale of a held-to-maturity debt security close enough to its maturity date that a change in the market interest rates would not significantly affect the security's fair value may be considered a sale at maturity.

If XYZ Company sells its investment in ABC bonds on November 1, 2002, for example, at $99\frac{3}{4}$ plus accrued interest, the following computations and entries would be made. The discount amortization from July 1, 2002, to November 1, 2002, is $\$635(4/6 \times \$952)$.

The entry to record this discount amortization is as follows;

November 1, Investment in HTM securities 635

2002 Interest Revenue 635

The computation of the realized gain on the sale is shown below:

Selling price of bonds (exclusive of accrued interest)..... \$99,750

Less: Book value of bonds on November 1, 2002:

Amortized cost, July 1, 2002\$99,048

Add: Discount amortized for the period

July 1, 2002, to November 1, 2002 635

99,683

Gain on sale of bonds	<u>\$67</u>
-----------------------------	-------------

The entry to record the sale of the bonds is:

November 1, Cash	102,417
2002	
Interest Revenue (4/6 × \$4,000)	2, 667
Investment- HTM Securities	99,683
Gain on sale of securities	67

The credit to Interest Revenue represents accrued interest for 4 months, for which the purchaser pays cash. The debit to cash represents the selling price of the bonds, \$99,750, plus accrued interests of \$2,667. The credit to the Investment in HTM securities account represents the book value of the bonds on the date of sale, and the credit to Gain on sale of Securities represents the excess of the selling price over the book value of the bonds.

Activity- 4

On January 1, 2003 Selam Business Group purchased as an investment \$700,000 of 12% bonds. Because the 12% stated rate was less than the rate paid by other companies on similar bonds, say 14%, Selam Business Group was able to buy the securities at a "discounted" price of \$666,633. Interest is receivable semiannually on June 30 and December 31.

1) Record the journal entry for the purchase of investment securities.

2) Record the journal entry for the interest received for the first six months as investment revenue.

You can compare your answer for activity 4 with the following:

1. Investment in HTM securities -----	666, 633
Cash -----	666,633
2. Cash (stated rate × face amount) -----	42,000
Investment in HTM securities (difference) -----	4,664
Interest revenue (Market rate × outstanding balance) -----	46,664

Trading and available-for-sale debt securities are illustrated for short term investments in Financial Accounting I course. However, the fair value method is much less appropriate for long-term investments. By definition, long-term investments are not held to take advantage of short-term fluctuations in market prices. When an investor intends to hold investments in securities for long period of time, the daily changes in market price lose-significance.

4.3. SPECIAL PROBLEMS IN ACCOUNTING FOR LONG-TERM INVESTMENTS IN SECURITIES

4.3.1 Cost Identification

Investments in securities may pose a problem as to which costs should be offset against revenue in the period of sale. For example, assume that an investor acquires 1,000 shares of Z company common stock at a price of \$80 a share, and 1,000 shares at \$90 a share. Several years later, the investor sells 1,000 shares of Z Company's common stock for \$84 a share. Should the investor recognize a \$4,000 gain or a 6,000 loss?

The answer to this question requires making a cost flow assumption, as with inventories. Because securities usually are identified by a certificate number, it would be possible to use specific identification of stock certificates to establish the cost of the 1,000 shares sold. However, an alternative cost flow assumption might be adopted. The alternative methods of cost flow include , (1) FIFO-the first shares acquired are assumed to be the first ones sold; (2) LIFO-the last shares acquired are assumed to be the first ones sold; and (3) weighted-average cost each share is assigned the same cost basis.

4.3.2. Accounting for stock Dividends and stock splits

Cash dividends on investments in capital stock of other companies accounted for by the fair value method or the cost method are recognized as earned at the time of the declaration of the cash dividend. Stock dividends, which provide another way a company can make a distribution to stock holders, are not included as investment revenue.

When a stock dividend is issued, the distributing corporation debits retained earnings and credits the appropriate capital stock accounts. The effect of a stock dividend from the issuing corporations view is to capitalize a part of retained earnings. Significantly, a stock dividend does not decrease the assets of the issuing corporation.

From the investor's point of view, the nature of a stock dividend is suggested by its effect on the issuing corporation. The investors neither receive assets from the corporation nor own more of the issuing corporation; they merely have more shares to represent the same prior **proportional ownership**. Thus the receipt of a stock dividend does not increase the carrying value of the holdings but decrease the carrying value per share.

To illustrate, assume that XYZ Company purchased 1,000 shares of common stock, par \$5, of ABC Corporation at \$90 per share. Subsequently, XYZ Company received a 50 percent common stock dividend. XYZ later sold 200 of the common shares at \$75 per share. XYZ's entries are as follows:

At the acquisitions date:

Long-term investments in equity securities, ABC Corp. (1,000 ×\$ 90) ...	90,000
Cash	90,000

At date of stock dividend:

Memorandum entry only-Received 50 percent common stock
dividend of 500 shares from ABC Corporation, revised cost

Per share: $\$90,000 \div (1,000 + 500 = 1,500 \text{ shares}) = \60

At the date of sale of 200 common shares:

Cash ($200 \times \$75$)	15,000
Long-term investment in equity securities, ABC Corp. ($200 \times \$60$)	12,000
Gain on sale of investments	3,000
(Remaining shares: 1,300 at \$60 cost per share)	

These procedures are followed for the cost, equity, and fair value methods; the only difference is in the total carrying value. For all three methods, the appropriate total carrying value is divided by the new total number of shares owned to determine the carrying value per share after the stock dividend.

If the stock dividend is of a different class of stock from that on which the dividend is declared, such as preferred stock received as a dividend on common stock, or vice versa, three methods of accounting for the dividend are possible;

1. **Allocation method:** Record the new stock at an amount determined by allocating the carrying value of the old stock between the new stock and the old stock on the basis of the relative market values of the different classes of stock after issuance of the dividend.
2. **Non cost method:** Record the new stock in terms of shares only (as a memorandum entry). When it is sold, recognize the total sale price as a gain.
3. **Market value method:** Record the new stock at its market value upon receipt with an offsetting credit to dividend revenue. This method treats stock of a different class received as a dividend similar to a property dividend.

The allocation method is the most consistent with the historical cost principle. The non cost method is considered to be conservative, and the market value method is seldom used. You can see the application of the allocation method in the illustration below, which assigns the original cost to the two classes of stock. This method would be followed for the cost, equity, and market value methods, with the appropriate carrying value being allocated.

To illustrate, assume that X Company purchased 100 shares of Y company common stock at \$75 per share (total cost, \$7,500). Some time later, X company received a stock dividend of 40 shares

of Y company preferred stock with a market value of \$2,500. At that time the market value of the common stock was \$10,000. Using the allocation method, the cost is apportioned, based on the total market value of \$12,500 as follows:

$$\begin{array}{l} \text{Cost allocated to} \\ \text{common stock} \end{array} = \$7,500 \times \frac{\$10,000}{\$12,500} = \$6,000 \text{ or } \$60 \text{ per share}$$

$$\begin{array}{l} \text{Cost allocated to} \\ \text{preferred stock} \end{array} = \$7,500 \times \frac{\$2,500}{\$12,500} = \$1,500 \text{ or } 37.50 \text{ per share}$$

Total cost allocated\$7,500

Entry to record receipt of stock dividend by X company:

Investment in preferred stock of Y company (40× \$37.50) ...1,500

Investment in common stock of Y company1,500

Although a stock split is different from a stock dividend from the point of view of the issuer, the two are virtually identical from the point of view of the investor. In both cases, the investor has more shares than before the split or dividend, but at the same total cost. The investor's accounting for a stock split is the same as for a stock dividend of the same class of stock. Only a memorandum entry is made to record the number of new shares received, and the cost (or carrying value) per share is recomputed (we will discuss about stock splits in chapter three).

4.3.3. Property Dividends

When a corporation distributes a dividend in the form of merchandise, securities of other corporations, or other non cash assets, the investor records the property received at its current fair value. Income tax regulations also require the use of current fair value to measure dividend revenue from property dividends received.

4.3.4. . Stock warrants and stock rights

When a corporation is about to offer for sale additional shares of an issue already outstanding, it may forward to present holders of that issue certificates permitting them to purchase additional

shares in proportion to their present holdings. These certificates represent rights to purchase additional shares and are called **stock rights**. In rights offerings, rights generally are issued on the basis of one right per share, but it may take many rights to purchase one new share.

The certificate representing the stock rights called, a **stock warrant**, states the number of shares that the holder of the right may purchase and also the price at which they may be purchased. If this price is less than the current market value of such shares, the rights have an intrinsic value, and from the time they are issued until they expire they may be purchased and sold like any other security,

Stock rights have three important dates:

- 1) The date the rights offering is announced
- 2) The date as of which the certificates or rights are issued
- 3) The date the rights expire

From the date the right is announced until it is issued, the share of stock and the right are not separable, and the share is described as **rights-on**. After the certificate or right is received and up to the time it expires, the share and right can be sold separately. A share sold separately from an effective stock right is sold **ex-rights**.

When a right is received, the stock holders have actually received nothing that they did not have before, because the shares already owned brought them the right; they have received no distribution of the corporation assets. The carrying amount of the original shares held is now the carrying amount of those shares plus the rights, and it should be allocated between the two on the basis of their total market values at the time the rights are received. If the value allocated to the rights is maintained in a separate account, an entry would be made debiting Investments in SAS (Stock Rights) and crediting Investments in SAS.

Disposition of Rights

The investor who receives rights to purchase additional shares has three alternatives;

1. To exercise the rights by purchasing additional stock

2. To sell the rights
3. To permit them to expire without selling or using them.

If the investor buys additional stock, the carrying amount of the original shares allocated to the rights becomes a part of the carrying amount of the new shares purchased. If the investor sells the rights, the allocated carrying amount compared with the selling price determines the gain or loss on sale. If the investor permits the rights to expire, a loss is suffered, and the investment should be reduced accordingly.

To illustrate, assume the following:

Shares owned before issuance of rights – 100.

Cost of shares owned-\$50 a share for a total cost of \$5,000.

Rights received – one right for every share owned, or 100

rights; two rights are required to purchase one new share at \$50.

Market value at date rights issued; Shares \$60 a share

Rights \$3 a right

Total market value of shares (100×\$60)\$6,000

Total market value of rights (100×\$3) 300

Combined market value\$6,300

$$\text{Cost allocated to stock: } \frac{\$6,000}{\$6,300} \times \$5,000 = \$4,761.90$$

$$\text{Cost allocated to rights: } \frac{\$300}{\$6,300} \times \$5,000 = \frac{238.10}{5,000.00}$$

$$\text{Cost allocated to each share of stock: } \frac{\$4,761.90}{100} = \$47.619$$

$$\text{Cost allocated to each right: } \frac{\$238.10}{100} = \$2.381$$

The reduction in the carrying amount of the stock from \$5,000 to \$4,761.90 and the acquisition of the rights with an allocated cost of \$238.10 would be recorded as follows:

Investments in SAS (Stock Rights)	238.10
Investment in SAS	238.10

If some of the original shares are later sold, their cost for purpose of determining gain or loss on sale is \$47.619 per share, as computed above. If 10 of the original shares are sold at \$58 per share, the entry would be:

Cash	580.00
Investment in SAS	476.19
Gain on sale of stock	103.81

Entries for stock Rights: Rights may be sold or used to purchase additional stock or permitted to expire. If 40 rights to purchase 20 shares of stock are sold at \$3.00 each, the entry is:

Cash	120.00
Investments in SAS (Stock Rights)	95.24
Gain on sale of stock Rights	24.76

The amount removed from the stock rights account is the amount allocated to 40 rights, 40× \$2.381.

If rights to purchase 20 shares of stock are exercised and 20 additional shares are purchased at the offer price of \$50, the entry is:

Investments in SAS	1,095.24
Cash	1,000.00
Investments in SAS (Stock Rights)	95.24

If these shares are sold in the future, their cost should be considered to be \$1,095.24, or \$54.762 per share- the price paid of \$50 per share plus the amount allocated to two rights of \$4.762.

If the remaining 20 rights are permitted to expire, the amount allocated to these rights should be removed from the general ledger account by this entry:

Loss on expiration to stock rights47.62

Investments in SAS (Stock Rights)47.62

The balance of the general ledger investment accounts are shown below:

Investments in SAS (Stock)

Purchase of original		Cost allocated to	
100 shares at \$50		100rightsreceived	238.10
Pershare	5,000.00	Sale of 10 shares	
Purchase of 20 shares		oforiginalpurchase	476.19
byexercisof rights	<u>1,095.24</u>	Balance	<u>5,380.95</u>
	<u>6,095.24</u>		<u>6,095.24</u>
Balance	5,380.95*		

* Analysis of Balance:

90 shares of original purchase, at allocated cost of

\$47.619 per share \$4,285.71

20 shares purchased through exercise of rights,

carried at \$ 54.762 Per share (cash paid of

\$50.00, plus \$4.762 for allocated cost of two rights) 1,095.24

Balance of account, as above \$5,380.95

Investments in SAS (Stock Rights)

Cost allocated to 100rights		Saleof40rights	95.24
received	<u>238.10</u>	Exerciseof40rights	95.24
		Expirationof20rights	<u>47.62</u>
	<u>238.10</u>		<u>238.10</u>
Balance	-0-		

Activity- 5

Assume that Mesi Company purchased 500 shares of G-company common stock at \$93 per share, a total investment of \$46,500. The investment is classified as SAS (Securities available-for-sale). Later in the year of purchase, Mesi Company receives 500 stock rights that entitle if to acquire 100 shares. Each stock right conveys the right to purchase one-fifth of a share of G company common stock. At the date the G company common stock first trades ex rights, it has a market price of \$120 per share, and each stock right has a market value of \$4.

1. Show the entry to record the investment

2. Show the allocation of the cost of the investment to the stock right and the held common shares, using the relative market value.

3. Show the entry to record the receipt of the 500 stock rights for G company common stock

Your answers for activity- 5 should look like the one shown below:

1. The entry to record the investment is:

Investment in SAS G- Company common stock46,500

Cash46,500

2. To determine the allocation of the cost of the investment to stock rights and the held common shares, the relative market values are used:

Total market value of common shares held: (500 ×\$120)..... \$60,000

Total market value of stock rights held: (500 × \$4).....2, 000

Total market value of investment \$62,000

$$\begin{array}{l} \text{Cost to be allocated to} \\ \text{investments in stock rights} \end{array} = \frac{\$2,000}{\$62,000} \times \$46,500 = \$1,500$$

$$\begin{array}{l} \text{Cost to be allocated to} \\ \text{investments in common shares} \end{array} = \frac{\$60,000}{\$62,000} \times \$46,500 = \$45,000$$

Thus, the cost per share common stock is now $\frac{\$45,000}{500 \text{ shares}}$, or \$90

Per share, and the cost per right is $\frac{\$1,500}{500 \text{ rights}}$, or \$3 per right

3. The entry to record the receipt of the 500 stock rights for G company common stock is:

Investment in SAS: G company stock Right1,500

Investment in SAS::G company common stock 1,500

Summary of the Chapter

Companies invest in the securities of other companies and government agencies. There is a temporary investment of idle cash and long-term investment to develop a beneficial inter-company relationship that will increase the profitability of the investing company, both directly and indirectly.

A security is a share, participation, or other interest in the property or assets of the issuer, or an obligation of the issuer. It can be either a debt security or an equity security.

Common examples of debt securities are US Treasury securities, Municipal securities, corporate bonds and commercial papers. However, common examples of equity securities include common stock, preferred stock, and other capital stocks.

The three levels of control or influences that an investor company can have over an investee company are:

- 1) Controlling interest
- 2) Significant influence
- 3) No-significant influence

The accounting methods that are used for equity securities are fair value method, cost method, equity method and consolidated financial statements.

The cost of an investment in securities includes the acquisition price plus brokerage fees and any other expenditure incurred in the transaction. The current market price of the securities may be used to establish the cost of the securities acquired and the value of the non cash assets given in exchange if assets other than cash are given in payment for the securities and the current fair value of such non cash assets is unknown.

Investments in debt securities are grouped in to three separate categories for accounting and reporting purposes:

1. Held –to-Maturity
2. Trading

3. available-for-sale

Classification	Investment in Debt Securities	Investment in Equity securities
Control -greater than 50% ownership of voting stock	Not applicable	Equity method plus consolidation
Significant influence – 20% to 50% ownership of voting stock	Not applicable	Equity method
Debt securities classified as held to maturity , and equity securities for which fair value is not readily determinable.	Amortized cost method	Cost method
Debt and equity securities, classified as trading securities	Fair value method, with unrealized holding gain or loss included in earnings	
Debt and equity securities classified as available for sale	Fair value method, with unrealized holding gain or loss included as a component of stock holders' equity	

Exhibit.1-4 -: Summary of Accounting for long-term investments.

Exhibit.1-4: summarizes the methods of accounting for long-term investments. The mortised cost method is used only for debt securities that the business plans to hold to maturity. The fair value method is used for both debt and equity securities that are held available for sale and trading provided that they do not give the investor significant influence over the investee. If an investor holds enough common stock to exercise significant influence over the investee (usually over 20% or more of the outstanding common shares), then the equity method is required.

If a common stock holding enables the investor to control the investee (usually more than 50% of outstanding common shares), then in addition to using the equity method, the investor must prepare consolidated financial statements.

Stock dividends and stock splits are accounted for only as a memorandum entry for the number of shares received. The original cost per share of the investment is adjusted to reflect the increased number of shares owned. When stock rights are issued by the investee, the investor must allocated the total carrying amount of the investment between the old stock and the stock rights.

Self-Assessment Questions

I- Say True or False

1. Equity securities are represented only by common, preferred, and other capital stock.
2. The fair value accounting methods apprise only to equity securities that are common stock.
3. When an investor uses the cost method to account for an investment in common stock, the carrying value of the investment always remains equal to the acquisition cost of the common stock.
4. The equity method must be used to account for an investment in common stock if the investor can exercise significant influence over the financial and operating policies of the investee.
5. If an investee reports a material extraordinary gain the investor should also report its proportional share of the extraordinary gain in a similar manner in its income statement.
6. Since an investor makes no sacrifice to receive stock rights, no amount is recorded, as a cost of the stock rights.
7. The objective in accounting for a change form either the cost or the fair value method to the equity method of accounting for an investment is to make prior period financial statements appear as if the equity method had been applied during the prior periods.

II - Multiple Choice

1. Depending on an equity security's characteristics, all but which one of the following accounting methods could be used to account for the investment.

a) Cost	c) Fair Value
b) Equity	d) Lower of cost or market

2. An investor receiving a liquidating dividend should recognize it by:

- a) Decreasing the cash account
- b) Decreasing the investment revenue account
- c) Decreasing the investment account
- d) Increasing the investment revenue account

3. The valuation of a share of stock acquired by exercise of a stock right is equal to:

- a) The market value of the stock on the exercise date
- b) The book value of the stock right (s) surrendered
- c) The exercise price for the stock
- d) The book value of the stock right (s) surrendered plus the exercise price
of the stock

XY2 company acquired 30% of ABC company's voting stock for \$200,000 on January 2, 2003. XY2's 30% interest in ABC gave XY2 the ability to exercise significant influence over ABC's operating and financial policies. During 2003, ABC earned \$100,000 and paid dividends of \$50,000. ABC reported earnings of \$100,000 for the six months ended June 30, 2004, and \$200,000 for the year ended December 31, 2004. On July 1, 2004, XY2 sold half of its stock in ABC for \$150,000 cash. ABC paid dividends of \$60,000 on October 1, 2004. Based on the above information given, answer question number 4, 5 and 6.

4. Before income taxes what amount should XY2 include in its 2003 income statement as a result of the investment?

- a) \$15,000
- b) \$24,000
- c) \$50,000
- d) \$80,000

5. In XY2'S December 31,2003, balance sheet, what should be the carrying amount of this investment?

- a) \$200,000 c) \$224,000
- b) \$209,000 d) \$230,000

6. In its 2004 income statement, what amount should XY2 report as gain from the sale of half of its investment?

- a) \$24,000 c) \$35,000
- b) \$30,500 d) \$45,500

CHAPTER FIVE: SHAREHOLDERS' EQUITY

5.1.INTRODUCTION TO THE CORPORATE FORM OF ORGANIZATION

Of the three primary forms of business organization—the proprietorship, the partnership, and the corporation—the corporate form dominates. The corporation is by far the leader in terms of the aggregate amount of resources controlled, goods and services produced, and people employed. All of the “Fortune 500” largest industrial firms are corporations. Although the corporate form has a number of advantages (as well as disadvantages) over the other two forms, its principal advantage is its facility for attracting and accumulating large amounts of capital. The special characteristics of the corporate form that affect accounting include:

1. Influence of state corporate law.
2. Use of the capital stock or share system.
3. Development of a variety of ownership interests.

State Corporate Law Anyone who wishes to establish a corporation must submit articles of incorporation to the state in which incorporation is desired. After fulfilling requirements, the state issues a corporation charter, thereby recognizing the company as a legal entity subject to state law. Regardless of the number of states in which a corporation has operating divisions, it is incorporated in only one state. It is to the company's advantage to incorporate in a state whose laws favor the corporate form of business organization. General Motors, for example, is incorporated in Delaware; U.S. Steel is a New Jersey corporation. Some corporations have increasingly been incorporating in states with laws favorable to existing management. For example, to thwart possible unfriendly takeovers, at one time, Gulf Oil changed its state of incorporation to Delaware. There, the board of directors alone, without a vote of the shareholders, may approve certain tactics against takeovers. Each state has its own business incorporation act. The accounting for stockholders' equity follows the provisions of these acts. In many cases, states have adopted the principles contained in the Model Business Corporate Act prepared by the American Bar Association. State laws are complex and vary both in their provisions and in their definitions of certain terms. Some laws fail to define technical terms. As a result, terms often mean one thing in one state and another thing in a different state. These problems may be further compounded because legal authorities often interpret the effects and restrictions of the laws differently.

Capital Stock or Share System Stockholders' equity in a corporation generally consists of a large number of units or shares. Within a given class of stock, each share exactly equals every other share. The number of shares possessed determines each owner's interest. If a company has one class of stock divided into 1,000 shares, a person who owns 500 shares controls one half of the ownership interest. One holding 10 shares has a one-hundredth interest. Each share of stock has certain rights and privileges. Only by special contract

can a company restrict these rights and privileges at the time it issues the shares. Owners must examine the articles of incorporation, stock certificates, and the provisions of the state law to ascertain such restrictions on or variations from the standard rights and privileges. In the absence of restrictive provisions, each share carries the following rights:

1. To share proportionately in profits and losses.
2. To share proportionately in management (the right to vote for directors).
3. To share proportionately in corporate assets upon liquidation.
4. To share proportionately in any new issues of stock of the same class—called the preemptive right

The first three rights are self-explanatory. The last right is used to protect each stockholder's proportional interest in the company. The preemptive right protects an existing stockholder from involuntary dilution of ownership interest. Without this right, stockholders might find their interest reduced by the issuance of additional stock without their knowledge, and at prices unfavorable to them. However, many corporations have eliminated the preemptive right. Why? Because this right makes it inconvenient for corporations to issue large amounts of additional stock, as they frequently do in acquiring other companies. The share system easily allows one individual to transfer an interest in a company to another investor. For example, individuals owning shares in Best Buy may sell them to others at any time and at any price without obtaining the consent of the company or other stockholders. Each share is personal property of the owner, who may dispose of it at will. Best Buy simply maintains a list or subsidiary ledger of stockholders as a guide to dividend payments, issuance of stock rights, voting proxies, and the like. Because owners freely and frequently transfer shares, Best Buy must revise the subsidiary ledger of stockholders periodically, generally in advance of every dividend payment or stockholders' meeting. In addition, the major stock exchanges require ownership controls that the typical corporation finds uneconomic to provide. Thus, corporations often use registrars and transfer agents who specialize in providing services for recording and transferring stock. The Uniform Stock Transfer Act and the Uniform Commercial Code govern the negotiability of stock certificates.

Variety of Ownership Interests In every corporation, one class of stock must represent the basic ownership interest. That class is called common stock. Common stock is the residual corporate interest that bears the ultimate risks of loss and receives the benefits of success. It is guaranteed neither dividends nor assets upon dissolution. But common stockholders generally control the management of the corporation and tend to profit most if the company is successful. In the event that a corporation has only one authorized issue of capital stock, that issue is by definition common stock, whether so designated in the charter or not. In an effort to broaden investor appeal, corporations may offer two or more classes of stock, each with different rights or privileges. In the preceding section we pointed out

that each share of stock of a given issue has the same four inherent rights as other shares of the same issue. By special stock contracts between the corporation and its stockholders, however, the stockholder may sacrifice certain of these rights in return for other special rights or privileges. Thus special classes of stock, usually called preferred stock, are created. In return for any special preference, the preferred stockholder always sacrifices some of the inherent rights of common stock ownership. A common type of preference is to give the preferred stockholders a prior claim on earnings. The corporation thus assures them a dividend, usually at a stated rate, before it distributes any amount to the common stockholders. In return for this preference, the preferred stockholders may sacrifice their right to a voice in management or their right to share in profits beyond the stated rate.

5.2. TYPES OF SHARE

5.3. Par Value Stock

In issuing stock, companies follow these procedures: First, the state must authorize the stock, generally in a certificate of incorporation or charter. Next, the corporation offers shares for sale, entering into contracts to sell stock. Then, after receiving amounts for the stock, the corporation issues shares. The corporation generally makes no entry in the general ledger accounts when it receives its stock authorization from the state of incorporation.

We discuss the accounting problems involved in the issuance of stock under the following topics.

1. Accounting for par value stock.
2. Accounting for no-par stock.
3. Accounting for stock issued in combination with other securities (lump-sum sales).
4. Accounting for stock issued in noncash transactions.
5. Accounting for costs of issuing stock.

The par value of a stock has no relationship to its fair value. At present, the par value associated with most capital stock issuances is very low.

To show the required information for issuance of par value stock, corporations maintain accounts for each class of stock as follows.

1. ***Preferred Stock or Common Stock.*** Together, these two stock accounts reflect the par value of the corporation's issued shares. The company credits these accounts when it originally issues the shares. It makes no additional entries in these accounts unless it issues additional shares or retires them.

2. ***Paid-in Capital in Excess of Par (also called Additional Paid-in Capital)***. The **Paid in Capital in Excess of Par** account indicates any excess over par value paid in by stockholders in return for the shares issued to them. Once paid in, the excess over par becomes a part of the corporation's additional paid-in capital. The individual stockholder has no greater claim on the excess paid in than all other holders of the same class of shares.

No-Par Stock

Many states permit the issuance of capital stock without par value, called **no-par stock**. The reasons for issuance of no-par stock are twofold: First, issuance of no-par stock **avoids the contingent liability** (see footnote 3) that might occur if the corporation issued par value stock at a discount. Second, some confusion exists over the relationship(or rather the absence of a relationship) between the par value and fair value. If shares have no-par value, **the questionable treatment of using par value as a basis for fair value never arises**. This is particularly advantageous whenever issuing stock for property items such as intangible or tangible fixed assets.

A major disadvantage of no-par stock is that some states levy a high tax on these issues. In addition, in some states the total issue price for no-par stock may be considered legal capital, which could reduce the flexibility in paying dividends.

Corporations sell no-par shares, like par value shares, for whatever price they will bring. However, unlike par value shares, corporations issue them without a premium or a discount. The exact amount received represents the credit to common or preferred stock. For example, Video Electronics Corporation is organized with authorized common stock of 10,000 shares without par value. Video Electronics makes only a memorandum entry for the authorization, inasmuch as no amount is involved. If Video Electronics then issues 500 shares for cash at \$10 per share, it makes the following entry.

Cash	5,000
Common Stock (no-par value)	5,000

If it issues another 500 shares for \$11 per share, Video Electronics makes this entry:

Cash	5,500
Common Stock (no-par value)	5,500

True no-par stock should be carried in the accounts at issue price without any additional paid-in capital or discount reported. But some states require that no-par stock have a **stated value**. The stated

value is a minimum value below which a company can not issue it. Thus, instead of being no-par stock, such stated-value stock becomes, in effect, stock with a very low par value. It thus is open to all the criticism and abuses that first encouraged the development of no-par stock.

If no-par stock has a stated value of \$5 per share but sells for \$11, all such amounts in excess of \$5 are recorded as additional paid-in capital, which in many states is fully or partially available for dividends. Thus, no-par value stock, with a low stated value, permits a new corporation to commence its operations with additional paid-in capital that may exceed its stated capital. For example, if a company issued 1,000 of the shares with a \$5 stated value at \$15 per share for cash, it makes the following entry.

Cash	15,000
Common Stock	5,000

Paid-in Capital in Excess of Stated Value—Common Stock 10,000

Most corporations account for no-par stock with a stated value as if it were parvalue stock with par equal to the stated value.

Stock Issued with Other Securities (Lump-Sum Sales)

Generally, corporations sell classes of stock separately from one another. The reason to do so is to track the proceeds relative to each class, as well as relative to each lot. Occasionally, a corporation issues two or more classes of securities for a single payment or lump sum (e.g., in the acquisition of another company). The accounting problem in such **lump-sum sales** is how to allocate the proceeds among the several classes of securities. Companies use one of two methods of allocation:

- (1) the proportional method and
- (2) the incremental method.

Proportional Method. If the fair value or other sound basis for determining relative value is available for each class of security, the company allocates the lump sum received among the classes of securities on a proportional basis. For instance, assume a company issues 1,000 shares of \$10 stated value common stock having a fair value of \$20 a share, and 1,000 shares of \$10 par value preferred stock having a fair value of \$12 a share, for a lump sum of \$30,000. I

The following illustration shows how the company allocates the \$30,000 to the two classes of stock.

Fair value of common (1,000 × \$20) =	\$20,000
Fair value of preferred (1,000 × \$12) =	12,000
Aggregate fair value	<u>\$32,000</u>
Allocated to common:	$\frac{\$20,000}{\$32,000} \times \$30,000 = \$18,750$
Allocated to preferred:	$\frac{\$12,000}{\$32,000} \times \$30,000 = \$11,250$
Total allocation	<u>\$30,000</u>

2. Incremental Method. In instances where a company cannot determine the fair value of all classes of securities, it may use the incremental method. It uses the fair value of the securities as a basis for those classes that it knows, and allocates the remainder of the lump sum to the class for which it does not know the fair value. For instance, if a company issues 1,000 shares of \$10 stated value common stock having a fair value of \$20, and 1,000 shares of \$10 par value preferred stock having no established fair value, for a lump sum of \$30,000, it allocates the \$30,000 to the two classes as shown in the following illustration

Lump-sum receipt	\$30,000
Allocated to common (1,000 × \$20)	<u>(20,000)</u>
Balance allocated to preferred	<u>\$10,000</u>

If a company cannot determine fair value for any of the classes of stock involved in a lump-sum exchange, it may need to use other approaches. It may rely on an expert's appraisal. Or, if the company knows that one or more of the classes of securities issued will have a determinable fair value in the near future, it may use a best estimate basis with the intent to adjust later, upon establishment of the future fair value.

Stock Issued in Noncash Transactions Accounting for the issuance of shares of stock for property or services involves an issue of valuation. The general rule is: Companies should record stock issued for services or property other than cash at either the fair value of the stock issued or the fair value of the noncash consideration received, whichever is more clearly determinable. If a company can readily determine both, and the transaction results from an arm's length exchange, there will probably be little difference in their fair values. In such cases, the basis for valuing the exchange should not matter. If a company cannot readily determine either the fair value of the stock it issues or the property or services it receives, it should employ an appropriate valuation technique. Depending on available data, the valuation may be based on market transactions involving comparable assets or the use of discounted expected future cash flows. Companies should avoid the use of the book, par, or stated values as a basis of valuation for these transactions. A company may exchange unissued stock or treasury stock (issued shares that it has reacquired but not retired)

for property or services. If it uses treasury shares, the cost of Proportional the treasury shares should not be considered the decisive factor in establishing the fair value of the property or services. Instead, it should use the fair value of the treasury stock, if known, to value the property or services. Otherwise, if it does not know the fair value of the treasury stock, it should use the fair value of the property or services received, if determinable. The following series of transactions illustrates the procedure for recording the issuance of 10,000 shares of \$10 par value common stock for a patent for Marlowe Company, in various circumstances.

1. Marlowe cannot readily determine the fair value of the patent, but it knows the fair value of the stock is \$140,000.

Patents	140,000	
Common Stock (10,000 shares x \$10 per share)		100,000
Paid-in Capital in Excess of Par—Common Stock		40,000

2. Marlowe cannot readily determine the fair value of the stock, but it determines the fair value of the patent is \$150,000.

patents	150,000	
Common Stock (10,000 shares x \$10 per share)		100,000
Paid-in Capital in Excess of Par—Common Stock		50,000

3. Marlowe cannot readily determine the fair value of the stock nor the fair value of the patent. An independent consultant values the patent at \$125,000 based on discounted expected cash flows.

Patents	125,000	
Common Stock (10,000 shares 3 \$10 share)		100,000
Paid-in Capital in Excess of Par—Common Stock		25,000

In corporate law, the board of directors has the power to set the value of noncash transactions. However, boards sometimes abuse this power. The issuance of stock for property or services has resulted in cases of overstated corporate capital through intentional overvaluation of the property or services received. The overvaluation of the stockholders' equity resulting from inflated asset values creates watered stock. The corporation should eliminate the "water" by simply writing down the overvalued assets. If, as a result of the issuance of stock for property or services, a corporation undervalues the recorded assets, it creates secret reserves. An understated corporate structure (secret reserve) may also result from other methods: excessive depreciation or amortization charges, expensing capital expenditures, excessive write-downs of inventories or receivables, or any other understatement of assets or overstatement of liabilities. An example of a liability overstatement is an excessive provision for estimated product warranties that ultimately results in an understatement of owners' equity, thereby creating a secret reserve.

Costs of Issuing Stock When a company like Walgreens issues stock, it should report direct costs incurred to sell stock, such as underwriting costs, accounting and legal fees, printing costs, and taxes, as a reduction of the amounts paid in. Walgreens therefore debits issue costs to Paid-in Capital in Excess of Par—Common Stock because they are unrelated to corporate operations. In effect, issue costs are a cost of financing. As such, issue costs should reduce the proceeds received from the sale of the stock. Walgreens should expense management salaries and other indirect costs related to the stock issue because it is difficult to establish a relationship between these costs and the sale proceeds. In addition, Walgreens expenses recurring costs, primarily registrar and transfer agents' fees, as incurred.

Reacquisition of Shares Companies often buy back their own shares. In fact, share buybacks now exceed dividends as a form of distribution to stockholders. For example, oil producer ConocoPhillips, health-care-products giant Johnson & Johnson, and discount retailer Wal-Mart Stores have ambitious buyback plans. Buybacks more than doubled from 2004 to 2007. However, as a result of the financial crisis, the buyback trend slowed in 2008, with buybacks declining 40 percent from 2007 highs. But 2009 buybacks rebounded, led by major companies like IBM, which announced a \$5 billion buy back.⁵ Corporations purchase their outstanding stock for several reasons:

- To provide tax-efficient distributions of excess cash to shareholders. Capital gain rates on sales of stock to the company by the stockholders have been approximately half the ordinary tax rate for many investors. This advantage has been somewhat diminished by recent changes in the tax law related to dividends.
- To increase earnings per share and return on equity. Reducing both shares outstanding and stockholders' equity often enhances certain performance ratios. However, strategies to hype performance measures might increase performance in the short-run, but these tactics add no real long-term value.
- To provide stock for employee stock compensation contracts or to meet potential merger needs. Honeywell Inc. reported that it would use part of its purchase of one million common shares for employee stock option contracts. Other companies acquire shares to have them available for business acquisitions.
- To thwart takeover attempts or to reduce the number of stockholders. By reducing the number of shares held by the public, existing owners and managements bar "outsiders" from gaining control or significant influence. When Ted Turner attempted to acquire CBS, CBS started a substantial buyback of its stock. Companies may also use stock purchases to eliminate dissident stockholders.
- To make a market in the stock. As one company executive noted, "Our company is trying to establish a floor for the stock." Purchasing stock in the marketplace creates a demand. This may stabilize the

stock price or, in fact, increase it. Some publicly held corporations have chosen to “go private,” that is, to eliminate public (outside) ownership entirely by purchasing all of their outstanding stock. Companies often accomplish such a procedure through a leveraged buyout (LBO), in which the company borrows money to finance the stock repurchases. After reacquiring shares, a company may either retire them or hold them in the treasury for reissue. If not retired, such shares are referred to as treasury stock (treasury shares). Technically, treasury stock is a corporation’s own stock, reacquired after having been issued and fully paid.

Treasury stock is not an asset. When a company purchases treasury stock, a reduction occurs in both assets and stockholders’ equity. It is inappropriate to imply that a corporation can own a part of itself. A corporation may sell treasury stock to obtain funds, but that does not make treasury stock a balance sheet asset. When a corporation buys back some of its own outstanding stock, it has not acquired an asset; it reduces net assets. The possession of treasury stock does not give the corporation the right to vote, to exercise preemptive rights as a stockholder, to receive cash dividends, or to receive assets upon corporate liquidation. Treasury stock is essentially the same as unissued capital stock. No one advocates classifying unissued capital stock as an asset in the balance sheet.

Purchase of Treasury Stock

Companies use two general methods of handling treasury stock in the accounts: the cost method and the par value method. Both methods are generally acceptable. The cost method enjoys more widespread use. The cost method results in debiting the Treasury Stock account for the reacquisition cost and in reporting this account as a deduction from the total paid-in capital and retained earnings on the balance sheet. • The par or stated value method records all transactions in treasury shares at their par value and reports the treasury stock as a deduction from capital stock only. No matter which method a company uses, most states consider the cost of the treasury shares acquired as a restriction on retained earnings. Companies generally use the cost method to account for treasury stock. This method derives its name from the fact that a company maintains the Treasury Stock account at the cost of the shares purchased. Under the cost method, the company debits the Treasury Stock account for the cost of the shares acquired. Upon reissuance of the shares, it credits the account for this same cost. The original price received for the stock does not affect the entries to record the acquisition and reissuance of the treasury stock. To illustrate, assume that Pacific Company issued 100,000 shares of \$1 par value common stock at a price of \$10 per share. In addition, it has retained earnings of \$300,000. The following illustration shows the stockholders’ equity section on December 31, 2011, before purchase of treasury stock.

ILLUSTRATION 5-3 Stockholders' Equity with No Treasury Stock

Stockholders' equity

Paid-in capital Common stock, \$1 par value, 100,000 shares		
issued and outstanding	\$ 100,000	
Additional paid-in capital	900,000	
Total paid-in capital	1,000,000	
Retained earnings	300,000	
Total stockholders' equity		\$1,300,000

On January 20, 2012, Pacific acquires 10,000 shares of its stock at \$11 per share. Pacific records the reacquisition as follows. January 20, 2012 Treasury Stock 110,000 Cash 110,000 Note that Pacific debited Treasury Stock for the cost of the shares purchased. The original paid-in capital account, Common Stock, is not affected because the number of issued shares does not change. The same is true for the Paid-in Capital in Excess of Par— Common Stock account. Pacific deducts treasury stock from total paid-in capital and retained earnings in the stockholders' equity section. Illustration 5-4 shows the stockholders' equity section for Pacific after purchase of the treasury stock.

Stockholders' equity	
Paid-in capital	
Common stock, \$1 par value, 100,000 shares	
issued and 90,000 outstanding	\$ 100,000
Additional paid-in capital	900,000
Total paid-in capital	1,000,000
Retained earnings	300,000
Total paid-in capital and retained earnings	1,300,000
Less: Cost of treasury stock (10,000 shares)	110,000
Total stockholders' equity	<u>\$1,190,000</u>

Pacific subtracts the cost of the treasury stock from the total of common stock, additional paid-in capital, and retained earnings. It therefore reduces stockholders' equity. Many states require a corporation to restrict retained earnings for the cost of treasury stock purchased. The restriction keeps intact the corporation's legal capital that it temporarily holds as treasury stock. When the corporation

sells the treasury stock, it lifts the restriction. Pacific discloses both the number of shares issued (100,000) and the number in the treasury (10,000). The difference is the number of shares of stock outstanding (90,000). The term outstanding stock means the number of shares of issued stock that stockholders own.

Sale of Treasury Stock

Companies usually reissue or retire treasury stock. When selling treasury shares, the accounting for the sale depends on the price. If the selling price of the treasury stock equals its cost, the company records the sale of the shares by debiting Cash and crediting Treasury Stock. In cases where the selling price of the treasury stock is not equal to cost, then accounting for treasury stock sold above cost differs from the accounting for treasury stock sold below cost. However, the sale of treasury stock either above or below cost increases both total assets and stockholders' equity.

1. Sale of Treasury Stock above Cost.

When the selling price of shares of treasury stock exceeds its cost, a company credits the difference to Paid-in Capital from Treasury Stock. To illustrate, assume that Pacific acquired 10,000 shares of its treasury stock at \$11 per share. It now sells 1,000 shares at \$15 per share on March 10. Pacific records the entry as follows on March 10, 2012

Cash	15,000	
Treasury Stock		11,000
Paid-in Capital from Treasury Stock		4,000

There are two reasons why Pacific does not credit \$4,000 to Gain on Sale of Treasury Stock: (1) Gains on sales occur when selling assets; treasury stock is not an asset. (2) A gain or loss should not be recognized from stock transactions with its own stockholders. Thus, Pacific should not include paid-in capital arising from the sale of treasury stock in the measurement of net income. Instead, it lists paid-in capital from treasury stock separately on the balance sheet, as a part of paid-in capital.

2. Sale of Treasury Stock below Cost.

When a corporation sells treasury stock below its cost, it usually debits the excess of the cost over selling price to Paid-in Capital from Treasury Stock. Thus, if Pacific sells an additional 1,000 shares of treasury stock on March 21 at \$8 per share, it records the sale as follows.

March 21, 2012

Cash	8,000	
Paid-in Capital from Treasury Stock	3,000	
Treasury Stock		11,000

We can make several observations based on the two sale entries (sale above cost and sale below cost): (1) Pacific credits Treasury Stock at cost in each entry. (2) Pacific uses Paid-in Capital from Treasury Stock for the difference between the cost and the resale price of the shares. (3) Neither entry affects the original paid-in capital account, Common Stock. After eliminating the credit balance in Paid-in Capital from Treasury Stock, the corporation debits any additional excess of cost over selling price to Retained Earnings. To illustrate, assume that Pacific sells an additional 1,000 shares at \$8 per share on April 10. Illustration 5-5 shows the balance in the Paid-in Capital from Treasury Stock account (before the April 10 purchase).

Paid in capital from treasury stock			
March 21	debited by	March 10	credited by
3000		4000	
			Balance 1000

In this case, Pacific debits \$1,000 of the excess to Paid-in Capital from Treasury Stock. It debits the remainder to Retained Earnings. The entry is:

April 10, 2012

Cash	8,000	
Paid-in Capital from Treasury Stock	1,000	
Retained Earnings	2,000	
Treasury Stock		11,000

Retiring Treasury Stock, The board of directors may approve the retirement of treasury shares. This decision results in cancellation of the treasury stock and a reduction in the number of shares of issued stock. Retired treasury shares have the status of authorized and unissued shares. The accounting effects are similar to the sale of treasury stock except that corporations debit the paid-in capital accounts applicable to the retired

shares instead of cash. For example, if a corporation originally sells the shares at par, it debits Common Stock for the par value per share. If it originally sells the shares at \$3 above par value, it also debits Paid-in Capital in Excess of Par—Common Stock for \$3 per share at retirement.

5.2. PREFERRED STOCK

As noted earlier, preferred stock is a special class of shares that possesses certain preferences or features not possessed by the common stock. The following features are those most often associated with preferred stock issues.

1. Preference as to dividends.
2. Preference as to assets in the event of liquidation.
3. Convertible into common stock.
4. Callable at the option of the corporation.
5. Nonvoting.

The features that distinguish preferred from common stock may be of a more restrictive and negative nature than preferences. For example, the preferred stock may be nonvoting, noncumulative, and nonparticipating. Companies usually issue preferred stock with a par value, expressing the dividend preference as a percentage of the par value. Thus, holders of 8 percent preferred stock with a \$100 par value are entitled to an annual dividend of \$8 per share. This stock is commonly referred to as 8 percent preferred stock. In the case of no-par preferred stock, a corporation expresses a dividend preference as a specific dollar amount per share, for example, \$7 per share. This stock is commonly referred to as \$7 preferred stock. A preference as to dividends does not assure the payment of dividends. It merely assures that the corporation must pay the stated dividend rate or amount applicable to the preferred stock before paying any dividends on the common stock. A company often issues preferred stock (instead of debt) because of a high debt-to-equity ratio. In other instances, it issues preferred stock through private placements with other corporations at a lower-than-market dividend rate because the acquiring corporation receives largely tax-free dividends (owing to the IRS's 70 percent or 80 percent dividends received deduction).

Features of Preferred Stock

A corporation may attach whatever preferences or restrictions, in whatever combination it desires, to a preferred stock issue, as long as it does not specifically violate its state incorporation law. Also, it may issue more than one class of preferred stock. We discuss the most common features attributed to preferred stock below.

Cumulative Preferred Stock

Cumulative preferred stock requires that if a corporation fails to pay a dividend in any year, it must make it up in a later year before paying any dividends to common stockholders. If the directors fail to declare a dividend at the normal date for dividend action, the dividend is said to have been “passed.” Any passed dividend on cumulative preferred stock constitutes a dividend in arrears. Because no liability exists until the board of directors declares a dividend, a corporation does not record a dividend in arrears as a liability but discloses it in a note to the financial statements. A corporation seldom issues noncumulative preferred stock because a passed dividend is lost forever to the preferred stockholder. As a result, this stock issue would be less marketable.

Participating Preferred Stock

Holders of participating preferred stock share ratably with the common stockholders in any profit distributions beyond the prescribed rate. That is, 5 percent preferred stock, if fully participating, will receive not only its 5 percent return, but also dividends at the same rates as those paid to common stockholders if paying amounts in excess of 5 percent of par or stated value to common stockholders. Note that participating preferred stock may be only partially participating. Although seldom used, examples of companies that have issued participating preferred stock are LTV Corporation, Southern California Edison, and Allied Products Corporation.

Convertible Preferred Stock

Convertible preferred stock allows stockholders, at their option, to exchange preferred shares for common stock at a predetermined ratio. The convertible preferred stockholder not only enjoys a preferred claim on dividends but also has the option of converting into a common stockholder with unlimited participation in earnings.

Callable Preferred Stock

Callable preferred stock permits the corporation at its option to call or redeem the outstanding preferred shares at specified future dates and at stipulated prices. Many preferred issues are callable. The corporation usually sets the call or redemption price slightly above the original issuance price and commonly states it in terms related to the par value. The callable feature permits the corporation to use the capital obtained through the issuance of such stock until the need has passed or it is no longer advantageous. The existence of a call price or prices tends to set a ceiling on the market value of the preferred shares unless they are

convertible into common stock. When a corporation redeems preferred stock, it must pay any dividends in arrears.

Redeemable Preferred Stock

Recently, more and more issuances of preferred stock have features that make the security more like debt (legal obligation to pay) than an equity instrument. For example, redeemable preferred stock has a mandatory redemption period or a redemption feature that the issuer cannot control. Previously, public companies were not permitted to report these debt-like preferred stock issues in equity, but they were not required to report them as a liability either. There were concerns about classification of these debt-like securities, which may have been reported as equity or in the “mezzanine” section of balance sheets between debt and equity. There also was diversity in practice as to how dividends on these securities were reported. The FASB now requires debt-like securities, like redeemable preferred stock, to be classified as liabilities and be measured and accounted for similar to liabilities.

Accounting for and Reporting Preferred Stock

The accounting for preferred stock at issuance is similar to that for common stock. A corporation allocates proceeds between the par value of the preferred stock and additional paid-in capital. To illustrate, assume that Bishop Co. issues 10,000 shares of \$10 par value preferred stock for \$12 cash per share. Bishop records the issuance as follows.

Cash	120,000
Preferred Stock	100,000
Paid-in Capital in Excess of Par—Preferred Stock	20,000

Thus, Bishop maintains separate accounts for these different classes of shares. In contrast to convertible bonds (recorded as a liability on the date of issue) corporations consider convertible preferred stock as a part of stockholders’ equity. In addition, when exercising convertible preferred stock, there is no theoretical justification for recognition of a gain or loss. A company recognizes no gain or loss when dealing with stockholders in their capacity as business owners. Instead, the company employs the book value method: debit Preferred Stock, along with any related Paid-in Capital in Excess of Par—Preferred Stock; credit Common Stock and Paid-in Capital in Excess of Par—Common Stock (if an excess exists).

Preferred stock generally has no maturity date. Therefore, no legal obligation exists to pay the preferred stockholder. As a result, companies classify preferred stock as part of stockholders’ equity. Companies

generally report preferred stock at par value as the first item in the stockholders' equity section. They report any excess over par value as part of additional paid-in capital. They also consider dividends on preferred stock as a distribution of income and not an expense. Companies must disclose the pertinent rights of the preferred stock outstanding.

5.3. DIVIDEND

Dividend payouts can be important signals to the market. The practice of paying dividends declined sharply in the 1980s and 1990s as companies focused on growth and plowed profits back into the business. A resurgence in dividend payouts is due in large part to the dividend tax cut of 2003, which reduced the rate of tax on dividends to 15 percent (quite a bit lower than the ordinary income rate charged in the past). In addition, investors who were burned by accounting scandals in recent years began demanding higher payouts in the form of dividends. Why? A dividend check provides proof that at least some portion of a company's profits is genuine.¹⁰ Determining the proper amount of dividends to pay is a difficult financial management decision. Companies that are paying dividends are extremely reluctant to reduce or eliminate their dividend. They fear that the securities market might negatively view this action. As a consequence, companies that have been paying cash dividends will make every effort to continue to do so. In addition, the type of shareholder the company has (taxable or nontaxable, retail investor or institutional investor) plays a large role in determining dividend policy. Very few companies pay dividends in amounts equal to their legally available retained earnings. The major reasons are as follows.

1. To maintain agreements (bond covenants) with specific creditors, to retain all or a portion of the earnings, in the form of assets, to build up additional protection against possible loss.
2. To meet state corporation requirements, that earnings equivalent to the cost of treasury shares purchased be restricted against dividend declarations.
3. To retain assets that would otherwise be paid out as dividends, to finance growth or expansion. This is sometimes called internal financing, reinvesting earnings, or "plowing" the profits back into the business.
4. To smooth out dividend payments from year to year by accumulating earnings in good years and using such accumulated earnings as a basis for dividends in bad years.
5. To build up a cushion or buffer against possible losses or errors in the calculation of profits. The reasons above are self-explanatory except for the second. The laws of some states require that the corporation restrict its legal capital from distribution to stockholders, to protect against loss for creditors. The applicable state law determines the legality of a dividend

Financial Condition and Dividend Distributions

Effective management of a company requires attention to more than the legality of dividend distributions. Management must also consider economic conditions, most importantly, liquidity. Assume an extreme situation as shown in Illustration 5-6.

Balance sheet			
Plant assets	\$500,000	Capital stock	\$400,000
	500,000	Retained earnings	<u>100,000</u>
			\$500,000

The depicted company has a retained earnings credit balance. Unless restricted, it can declare a dividend of \$100,000. But because all its assets are plant assets used in operations, payment of a cash dividend of \$100,000 would require the sale of plant assets or borrowing. Even if a balance sheet shows current assets, as in Illustration 5-7, the question remains as to whether the company needs its cash for other purposes.

Balance sheet			
Cash	\$100,000	Current liabilities	\$60,000
Plant assets	<u>\$460,000</u>	Capital stock	\$400,000
560,000		Retained earnings	<u>100,000</u>
			\$560,000

The existence of current liabilities strongly implies that the company needs some of the cash to meet current debts as they mature. In addition, day-to-day cash requirements for payrolls and other expenditures not included in current liabilities also require cash. Thus, before declaring a dividend, management must consider availability of funds to pay the dividend. A company should not pay a dividend unless both the present and future financial position warrant the distribution. The SEC encourages companies to disclose their dividend policy in their annual report, especially those that (1) have earnings but fail to pay dividends, or (2) do not expect to pay dividends in the foreseeable future. In addition, the SEC encourages companies that consistently pay dividends to indicate whether they intend to continue this practice in the future.

Types of Dividends Companies generally base dividend distributions either on accumulated profits (that is, retained earnings) or on some other capital item such as additional paid-in capital. Dividends are of the following types.

- A. Cash dividends.
- B. Property dividends.
- C. Liquidating dividends.
- D. Stock dividends.

Although commonly paid in cash, companies occasionally pay dividends in stock or some other asset.¹² All dividends, except for stock dividends, reduce the total stockholders' equity in the corporation. When declaring a stock dividend, the corporation does not pay out assets or incur a liability. It issues additional shares of stock to each stockholder and nothing more. The natural expectation of any stockholder who receives a dividend is that the corporation has operated successfully. As a result, he or she is receiving a share of its profits. A company should disclose a liquidating dividend—that is, a dividend not based on retained earnings—to the stockholders so that they will not misunderstand its source.

Cash Dividends

The board of directors votes on the declaration of cash dividends. Upon approval of the resolution, the board declares a dividend. Before paying it, however, the company must prepare a current list of stockholders. For this reason, there is usually a time lag between declaration and payment. For example, the board of directors might approve a resolution at the January 10 (date of declaration) meeting, and declare it payable February 5 (date of payment) to all stockholders of record January 25 (date of record).¹³ In this example, the period from January 10 to January 25 gives time for the company to complete and register any transfers in process. The time from January 25 to February 5 provides an opportunity for the transfer agent or accounting department, depending on who does this work, to prepare a list of stockholders as of January 25 and to prepare and mail dividend checks. A declared cash dividend is a liability. Because payment is generally required very soon, it is usually a current liability. Companies use the following entries to record the declaration and payment of an ordinary dividend payable in cash.

For example, Roadway Freight Corp. on June 10 declared a cash dividend of 50 cents a share on 1.8 million shares payable July 16 to all stockholders of record June 24.

At date of declaration (June 10)

Retained Earnings (Cash Dividends Declared)	900,000
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Dividends Payable	900,000
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At date of record (June 24) No entry

At date of payment (July 16)

Dividends Payable

900,000

Cash

900,000

To set up a ledger account that shows the amount of dividends declared during the year, Roadway Freight might debit Cash Dividends Declared instead of Retained Earnings at the time of declaration. It then closes this account to Retained Earnings at year-end. A company may declare dividends either as a certain percent of par, such as a 6 percent dividend on preferred stock, or as an amount per share, such as 60 cents per share on no-par common stock. In the first case, the rate multiplied by the par value of outstanding shares equals the total dividend. In the second, the dividend equals the amount per share multiplied by the number of shares outstanding. Companies do not declare or pay cash dividends on treasury stock.

Property Dividends Dividends payable in assets of the corporation other than cash are called property dividends or dividends in kind. Property dividends may be merchandise, real estate, or investments, or whatever form the board of directors designates. Ranchers Exploration and Development Corp. reported one year that it would pay a fourth-quarter dividend in gold bars instead of cash. Because of the obvious difficulties of divisibility of units and delivery to stockholders, the usual property dividend is in the form of securities of other companies that the distributing corporation holds as an investment. For example, after ruling that DuPont's 23 percent stock interest in General Motors (GM) violated antitrust laws, the Supreme Court ordered DuPont to divest itself of the GM stock within 10 years. The stock represented 63 million shares of GM's 281 million shares then outstanding. DuPont could not sell the shares in one block of 63 million. Further, it could not sell 6 million shares annually for the next 10 years without severely depressing the value of the GM stock. DuPont solved its problem by declaring a property dividend and distributing the GM shares as a dividend to its own stockholders. When declaring a property dividend, the corporation should restate at fair value the property it will distribute, recognizing any gain or loss as the difference between the property's fair value and carrying value at date of declaration. The corporation may then record the declared dividend as a debit to Retained Earnings (or Property Dividends Declared) and a credit to Property Dividends Payable, at an amount equal to the fair value of the distributed property. Upon distribution of the dividend, the corporation debits Property Dividends Payable and credits the account containing the distributed asset (restated at fair value). For example, Trendler, Inc. transferred to stockholders some of its equity investments costing \$1,250,000 by declaring a property dividend on December 28, 2011, to be distributed on January 30, 2012, to stockholders of record on January 15, 2012. At the date of declaration, the securities have a market price of \$2,000,000. Trendier makes the following entries.

At date of declaration (December 28, 2011)

Equity Investments	750,000	
Unrealized Holding Gain or Loss—Income		750,000
Retained Earnings (property dividends declared)	2,000,000	
Property Dividends Payable		2,000,000

At date of distribution (January 30, 2012) Property

Dividends Payable	2,000,000	
Equity Investments		2,000,000

Liquidating Dividends Some corporations use paid-in capital as a basis for dividends. Without proper disclosure of this fact, stockholders may erroneously believe the corporation has been operating at a profit. To avoid this type of deception, intentional or unintentional, a clear statement of the source of every dividend should accompany the dividend check. Dividends based on other than retained earnings are sometimes described as liquidating dividends. This term implies that such dividends are a return of the stockholder's investment rather than of profits. In other words, any dividend not based on earnings reduces corporate paid-in capital and to that extent, it is a liquidating dividend. Companies in the extractive industries may pay dividends equal to the total of accumulated income and depletion. The portion of these dividends in excess of accumulated income represents a return of part of the stockholder's investment. For example, McChesney Mines Inc. issued a "dividend" to its common stockholders of \$1,200,000. The cash dividend announcement noted that stockholders should consider \$900,000 as income and the remainder a return of capital. McChesney Mines records the dividend as follows

At date of declaration

Retained Earnings	900,000	
Paid-in Capital in Excess of Par—Common Stock	300,000	
Dividends Payable		1,200,000

At date of payment

Dividends Payable	1,200,000	
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Cash

1,200,000

In some cases, management simply decides to cease business and declares a liquidating dividend. In these cases, liquidation may take place over a number of years to ensure an orderly and fair sale of assets. For example, when Overseas National Airways dissolved, it agreed to pay a liquidating dividend to its stockholders over a period of years equivalent to \$8.60 per share. Each liquidating dividend payment in such cases reduces paid-in capital.

Stock Dividends If management wishes to “capitalize” part of the earnings (i.e., reclassify amounts from earned to contributed capital), and thus retain earnings in the business on a permanent basis, it may issue a stock dividend. In this case, the company distributes no assets. Each stockholder maintains exactly the same proportionate interest in the corporation and the same total book value after the company issues the stock dividend. Of course, the book value per share is lower because each stockholder holds more shares. A stock dividend therefore is the issuance by a corporation of its own stock to its stockholders on a pro rata basis, without receiving any consideration. In recording a stock dividend, some believe that the company should transfer the par value of the stock issued as a dividend from retained earnings to capital stock. Others believe that it should transfer the fair value of the stock issued—its market value at the declaration date—from retained earnings to capital stock and additional paid-in capital. The fair value position was adopted, at least in part, in order to influence the stock dividend policies of corporations. Evidently in 1941, both the New York Stock Exchange and many in the accounting profession regarded periodic stock dividends as objectionable. They believed that the term dividend when used with a distribution of additional stock was misleading because investors’ net assets did not increase as a result of this “dividend.” As a result, these groups decided to make it more difficult for corporations to sustain a series of such stock dividends out of their accumulated earnings, by requiring the use of fair value when it substantially exceeded book value.¹⁴ When the stock dividend is less than 20–25 percent of the common shares outstanding at the time of the dividend declaration, the company is therefore required to transfer the fair value of the stock issued from retained earnings. Stock dividends of less than 20–25 percent are often referred to as small (ordinary) stock dividends. This method of handling stock dividends is justified on the grounds that “many recipients of stock dividends look upon them as distributions of corporate earnings and usually in an amount equivalent to the fair value of the additional shares received.” [3] We consider this argument unconvincing. It is generally agreed that stock dividends are not income to the recipients. Therefore, sound accounting should not recommend procedures simply because some recipients think they are income To illustrate a small stock dividend, assume that Vine Corporation has outstanding 1,000 shares of \$100 par value capital stock and retained earnings of \$50,000. If Vine declares a 10 percent stock dividend, it issues 100 additional shares

to current stockholders. If the fair value of the stock at the time of the stock dividend is \$130 per share, the entry is:

At date of declaration

Retained Earnings	13,000	
Common Stock Dividend Distributable		10,000
Paid-in Capital in Excess of Par—Common Stock		3,000

Note that the stock dividend does not affect any asset or liability. The entry merely reflects a reclassification of stockholders' equity. If Vine prepares a balance sheet between the dates of declaration and distribution, it should show the common stock dividend distributable in the stockholders' equity section as an addition to capital stock (whereas it shows cash or property dividends payable as current liabilities). When issuing the stock, the entry is:

At date of distribution

Common Stock Dividend Distributable	10,000	
Common Stock		10,000

No matter what the fair value is at the time of the stock dividend, each stockholder retains the same proportionate interest in the corporation. Some state statutes specifically prohibit the issuance of stock dividends on treasury stock. In those states that permit treasury shares to participate in the distribution accompanying a stock dividend or stock split, the planned use of the treasury shares influences corporate practice. For example, if a corporation issues treasury shares in connection with employee stock options, the treasury shares may participate in the distribution because the corporation usually adjusts the number of shares under option for any stock dividends or splits. But no useful purpose is served by issuing additional shares to the treasury stock without a specific purpose, since they are essentially equivalent to authorized but unissued shares

CHAPTER SIX: ACCOUNTING FOR LEASES

INTRODUCTION

Accounting for leasing transactions is a challenging problem for accountants. Leasing as a means of acquiring services of plant assets has grown in popularity and complexity as a result of capital shortages and income tax considerations. Instead of borrowing money to buy plant assets, a company leases them. Airlines, railroads, lease huge amounts equipment; leases huge amounts equipment; many hotels and motel chains lease their facilities; the government leases the real estate for investments. Many banks and investment firms have been active in the lease investment market for the past two decades. Investment firms can arrange lease investments for all types of assets.

This chapter examines how firms account for leases, which are a complex and newly established proposition used to finance assets acquisition.

Learning Objectives:

After you complete this chapter, you dear students will be able to:

- ✓ explain the nature of+ economic substance and advantages of lease transactions
- ✓ identify and describe the operational, financial and tax objective that motivate leasing
- ✓ be able to distinguish the types of leases
- ✓ describe the accounting for lessees and lessors
- ✓ understand sale-lease back arrangements and their accounting treatment
- ✓ describe the disclosure requirements for leases

6.1 Nature of Leases

A lease is a contract conveying the rights to use tangible property, usually for a stated period of time. The owner of the property for which the right is transferred is the lesser, and the party to whom the right is transferee is the lessee. A further transfer of the right to use an asset from a lessee to another party during the term of the lease is a sublease. In short, a lease is a contractual

agreement between lesser and a lessee that gives the lessee the right to use specific property, owned by the lesser, for a specific period of time in return for periodic cash payments (rents).

The lease term (duration) of the lease may be any thing from a short period of time to the entire expected economic life of the asset. The rental payments may be level from year to year, increasing in amount, or decreasing; they may be predetermined or may vary with sales, the prime interest rate, the consumer price index, or some other factor. In most cases the rent is set to enable the lesser to recover the cost of the asset plus a fair return over the life of the lease.

The obligations for taxes, insurance and maintenance may be assumed (covered) by either the lessor or the lessee, or they may be shared. The lease contract may be non cancelable or may grant the right to early termination on payment of a set scale prices plus a penalty. In case of default (failure to pay the entire rents), the lessee may be liable for all future payments at once, receiving title to the property in exchange; or the lessor may have the right to sell to a third party and collect from the lessee all or portion of the difference between the sales price and the lessor's unrecovered cost.

When the term of lease is terminated, the lessee may range from none to the right to purchase the leased asset at the fair market value or the right to renew or buy at a nominal price.

Terminology for leases

As do many other specialized areas, leasing has its own language. The following terms used for leases are involved in leasing transactions.

1. **Bargain purchase option** - a provision giving the lessee the right to acquire the leased property (either personal or real assets) at favorable price at the inception of the lease.
2. **Bargain renewal option** - a provision giving the lessee the right to renew the lease at rental so favorable that exercise of the option appears reasonably assured at the inception of the lease
3. **Contingent rentals** - Increases or decreases in lease payments after the inception of the lease because of changes in factors on which the lease payments are based.
4. **Economic life to the leased property**-the remaining period during which the leased property is expected to be useable for the purpose for which it was designed, with normal repairs and maintenance, without being limited by the lease term.

5. **Estimated residual value of leased property**-the estimated fair value of the leased property at the end of the lease term
6. **Unguaranteed residual value**-the portion of the estimated residual value that is not guaranteed by the lessee or by a third party unrelated to the lessor
7. **Fair value of leased property**-is a normal selling price of the leased property adjusted for any unusual market conditions for a sales-types lease.

It is the cost or carrying amount of the property in a direct financing-type lease.

8. **Inception of lease**-Date of the lease contract (commitment, if earlier)
9. **Incremental Borrowing Rate**-Rate that, at the inception of the lease, the lessee would have incurred to borrow funds necessary to acquire the leased property
10. **Initial direct Costs** - the costs (such as commissions, legal fees, and costs of processing documents) incurred by a lessor.
11. **Lessor's implicit Interest rate**-the discounted rate (applied to the minimum lease payments and any un guaranteed residual value) that cause the aggregate present value to be equal to the fair value of the leased property to the lessor, minus any investment tax credit retained by the lessor
12. **Lease term**- the fixed non cancelable terms of a lease plus
 1. any periods covered by bargain renewal options
 2. any periods for which failure to renew a lease places a heavy penalty on the lessee
 3. any periods covered by renewal options during which a guarantee by the lessee of the lessor's debt related to the leased property is expected to be in effect
 4. any periods covered by renewal options that precede the exercise date of the bargain purchase options, and
 5. any periods during which the lessor has the right to renew or extend the lease
13. **Minimum Lease payments** - the payments that the lessee is obligated to make or may be required to make; such payments include
 - the minimum periodic rentals up to the date of a bargain purchase option
 - any guarantee by the lessee of residual value
 - any payments on failure to renew or extend a lease and
 - the payment required by a bargain purchase option

* **Executory costs** such as insurance, repairs and maintenance, and property taxes in connection with the leased property are excluded from minimum lease payments.

14. Renewal or extension of lease-the continuation of a lease contract beyond the original lease term

Note: The terms unguaranteed residual value in definition 6 and guarantee by the lessee of the residual value in definition 13 need further comment. In some leases, the lessee guarantees a stated residual value for the leased property to assure the lessor that the leased property will be cared for adequately by the lessee and will not be worthless at the end of the lease term. All or part of the guaranteed residual value must be paid by the lessee to the lessor unless the lessor disposes of the leased property at the end of the lease term at an amount equal to or in excess of the guaranteed value.

An un guaranteed residual value is the responsibility of the lessor. In substance, the lessor doesn't "sell" the un guaranteed residual value of leased property to the lessee. Thus, the lessor accounts for un guaranteed residual value as part of the gross investment in the lease.

Advantages of Leasing

Some of the common advantages of leasing to the lessees are:

- **100% financing at Fixed Rates** - Leases are often signed with out requiring any money down from the lessee, which helps to conserve scarce cash. In addition, lease payments often remain fixed, which protects the lessee against inflation and increases in the cost of money
- **Protection against obsolescence**-leasing equipment reduces risk of obsolescence to the lessee, and in many cases, passes the risk in residual value to the lessor. In other words, when the equipment leased becomes obsolete, the lessee has the right to change by the new model of equipment.
- **Flexibility** - Lease agreements may contain less restrictive provisions than other debt agreements. For instance, rental payments can be structured when the leased property becomes productive so that it meets the cash revenues and the rental payments with in the same period.

- **Less costly Financing** - Leasing can provide income tax advantage derived from accelerated depreciation and interest expense of the leased property. Besides, the tax benefits can be passed back to the lessee in the form of lower rental payments.
- **Alternative Minimum Tax problems** - a company that pays the alternative minimum Tax (AMT) is entitled to credit against its regular tax liability in subsequent years. Thus, paying the AMT gives the entity a tax credit carry forward
- **Off-Balance Sheet Financing:** Certain leases don't add debt on balance sheet or affect financial ratios, and they may add to borrowing capacity. The lessee will not report the lease payment obligations as a balance sheet liability. However, it is a disadvantage of the financial statement user because it masks (hides) the facts.

In general, when the operational, tax and financial market advantages are considered, the net cost of leasing is often less than the cost of purchasing.

Disadvantages of Leasing

Dear Colleagues, in a global and competitive market, nothing is perfect; it might be relatively perfect. Leasing has also disadvantages. Some of these draw backs are

- The 100% financing of leased assets also means a higher total outlay of interest.
- Leasing ready-to-use equipment may result in lower quality product and ultimately lost sales to the lessee
- Short term leases may provide protection from product obsolescence, but short terms leasing rates are normally set at a premium over longer term rates to compensate the lessor for assuming the obsolescence risk.
- Tax benefits may be temporary. A new tax provision can be enacted at any time. This is a danger with all long-term leases featuring tax benefits.
- Long-term leases at fixed rates expose the lessor (lender) to the risk of opportunity losses if interest rates increase.

6.2. Accounting for Leases

The accounting for leases may be divided into two parts: **Accounting by lessees and accounting by lessor**. Lessors report the transfer of rights to use property that they own, and lessees account for and disclose payments for rights to use property that they don't own. If all lease contracts were identical, the accounting for leases would be simple.

6.2.1. Accounting by Lessees

Leases are classified for accounting purposes by lessees as either capital leases or operating leases.

1. **Capital leases** - is the lease contract that transfers essentially all the ownership risks (the responsibility for casualty loss, wear and tear, obsolescence, and maintenance) and ownership rewards (benefits such as the right to use, increases in the value of the leased asset, the ultimate transfer of title). Transfer of ownership can be assumed only if there is a high degree of permanence to the transfer, that is, the lease is non cancelable. The FASB apparently agrees with the capitalization approach when the lease is similar to an installment purchases.

Criteria for capital leases

If the lease meets any one of the following criteria as its inception it must be capitalized by the lessee but it must be non-cancelable:

Criteria 1 - The lease specifies that ownership of the leased property transfers to the lessee by the end of the lease term

Criteria 2 - The lease contains a bargain purchase option

Criteria 3 - The lease term is equal to 75% or more of the economic life of the leased property

Criteria 4 - The present value of the minimum lease payments is at least 90% of the excess of the fair value of the leased property over any investment tax credit retained by the lessor

To compute the present value of the minimum lease payment, the lessee uses its incremental borrowing rate unless

- ✓ the lessee can learn the lessor's implicit interest rate, and
- ✓ The lessor's implicit interest rate is less than the lessee's incremental borrowing rate.

If both these conditions are met, the lessee uses the lessor's implicit interest rate.

The lessee records a capital lease as both an asset and a liability in an amount equal to the present value of minimum lease payments during the lease term unless it exceeds the fair value of the

leased asset at the inception of the lease. However, if the amount of present value exceeds the fair value of leased asset, the amount capitalized is the fair value of the leased asset. The amount capitalized for the lease excludes any executory costs such as insurance, property taxes, and maintenance, which are expensed by the lessee.

Periodic payments (rentals) other than contingent rentals made by the lessee are allocated between a reduction of the lease liability and interest expense on the carrying amount of lease liability. Contingent rentals are included in the lessee's expenses as they accrue. Assets and liabilities recorded under capital leases are reported as separate items on the lessee's balance sheet, and the liabilities are segregated between current and non-current amount.

The lessee also records depreciation for the capital lease.

2. Operating Leases: If a lease doesn't meet any of the criteria for a capital lease it is considered to be more in the nature of a rental agreement is referred to as an operating lease. We assume that the fundamental rights and responsibilities of ownership are retained by the lessor and that the lessee merely is using the asset temporarily. In keeping that presumption, a sale is not recorded by the lessor, a purchase is not recorded by the lessee. Instead, the periodic rental payments are accounted for merely as rent by both parties to the transaction-rent revenue by the lessor and rent expense by the lessee.

6.2.2 Accounting by Lessors

Financial institutions and commercial leasing companies structure lease transaction as either operating or capital leases: The capital lease from the lessor's point of view is classified as

- ✓ Direct financing leases
- ✓ Sales type leases

The lessor in a direct financing lease purchases an asset to accommodate the leasing transaction, and immediately leases it to the lessee. Accounting for a directing financing lease is identical to accounting for a disposal of asset on credit. But rather than reporting an account receivable, the lessor reports a lease receivable on the balance sheet. No asset depreciation is taken by the lessor, and the lessor's profit comes entirely from interest.

Sales-types leases, used by manufactures and distributors, are similar to direct financing leases. But unlike a direct financing lease a sales-type lease doesn't involve purchase for immediate lease. The manufacturer instead leases out the assets from finished goods inventory, or the distributor leases the asset out of its inventory account. Here, the lessor's profit comes partly from selling the asset above cost and partly through interest.

The lessor in an operating lease acquires an asset and then leases it to a lessee in two separate transactions. The assets stay on the lessor's books throughout the term of the lease and are accounted for on the balance sheet as asset. When the asset is leased, the lessor sets up a lease revenue account to record and account for rent receipts from the lessee. No lease receivable account is used. The lessor depreciates the lease asset in the normal manner.

For the lessor to record the transaction, it is necessary to satisfy the conditions of the revenue realization principle. In particular, the FASB specifies that for the lessor to record a lease as a direct financing lease or a sales-type lease, two conditions must be met in addition to one of the four criteria for capital leases:

Criteria 1 - The collectability of the lease payments must be reasonably
predictable

Criteria 2 - if any costs to the lessor have yet to be incurred, they are reasonably predictable (performance by the lessor is substantially complete).

Note - Although sales revenue is not recorded in a direct financing lease (capital lease to the lessee), the leased asset is removed from the lessor's books and is replaced by a receivable)

Activity

Dear colleagues, to test your understandings on the fore going discussions, try to answer the following questions without browsing back

1. List three advantages and two disadvantages of leasing

2. Discuss the basic conditions to treat the lease as ‘‘capital lease’’ from the lessor’s perspective

3. Assume you are the lessee for X company. When do you use the lessor’s (X company) implicit interest rate to compute the present value of the minimum lease payments at the inception of the lease?

1. Mention the components of minimum lease payments

Illustration of Accounting for a capital lease:

1. On January 2, 1995, Nile Insurance Corporation leased a machine to Bahir Dar University for a 3-year non cancelable term at an annual rental of Br. 38,556 each payable at the beginning of the year.
2. The agreement involves no collection uncertainties, and the lessor’s performance is complete
3. The fair market value of the machine at the inception of the lease is Br. 110,000
4. The lease doesn’t contain a renewal or bargain purchase option, and the machine reverts to the lessor at the end of the three-year period
5. The lessee’s incremental borrowing rate is 12%

6. Both companies depreciate the machine using the straight-line method for book purposes. The asset's residual value is estimated to be Br. 0 on December 31, 1999, end of estimated useful life.
7. The accounting year ends December 31, for each party
8. The lessor's implicit interest rate is 10%
9. Bahir Dar University pays all of the executory costs except for the property taxes of Br 2000 per year, which are included in the annual payments to Nile Insurance Corporation

Required:

- a) Compute the cost of the machine at the inception of the lease.
- b) Evaluate whether it is capital lease or operating lease
- c) Prepare the journal entries of both the Nile Insurance Corporation and Bahir Dar University on Jan 1, 1995, December 31, 1995, January 1, 1996 and December 31, 1996.
- d) Prepare the lease amortization schedule

Solution:

- a) The cost of the machine is the present value of the machine.

Since the annual rent payment is made at the beginning of the period, it concerns annuity due. If payment were made at the end of the year, it would be ordinary annuity.

Thus, present value of annuity due = periodic payment $\times \frac{(1 - (1 + i)^{-n})(1 + i)}{i}$

Present value of ordinary annuity = Periodic payment $\times \frac{x(1 - 1 + i)^{-n}}{i}$

Where n, is the no. of years (periods)

Before we compute the present value, the executory cost for property tax should be excluded from periodic payment made annually.

periodic payment (excluding property tax) = Br. 38,556 - 2000

= Br. 36,556

Present value = periodic payment (excluding property tax) $\frac{x(1 - (1 + i)^{-n})(1 + i)}{i}$

$$= \text{Br. } 36,556 \frac{x(1 - 1 + 0.1)^{-3}(1 + 0.1)}{0.1}$$

= Br. 100,000

* Since the lessor's implicit interest rate is less than the incremental borrowing rate, it is used to compute the present value of the leased asset (machine)

b) It is a capital lease because,

- It is non cancelable lease, and
- the present value is greater than 90% of the fair value of the leased asset (Br 100,000 > 90% of Br 110,000)

We know that if one of the four criteria is met, it becomes capital lease. In this illustration except criterion 4 the others are not met.

c) **Book of lessee (Bahir Dar University)**

Jan 1, 1995 - Leased Machine 100,000

Lease Payable 100,000

(To record capital lease at inception of lease)

Property tax expense	2000
Lease payable	36,556
Cash	38,556

(To record lease payment for 1995)

December 31,1995 - Interest expense 6344

(Br. 100,000-36,556) x 10%)

Lease payable/Interest payable 6344

Depreciation expense (100,000 ÷ 3) 33,333

Accumulated Depreciation 33,333

Jan 1, 1996, ... Property tax expense 2000 OR

Lease payable 36,556

Cash 38,556

}
}

OR,

Property tax expense. 2,000.

Interest payable 6,344

Lease payable 30,21

Cash 38,556

Dec. 31,1996 Dep. expense 33,333

Accumulated dep. 33,333

Interest expense 3323*

Lease payable/Interest payable 3323

Book of Lessor (Nile Insurance Corporation)

Jan. 1, 1995 - Lease Receivable (36,556x3) 109,668

Leased Machine 100,000

Unearned Interest Income 9,668

Cash 38,556

Property tax payable 2,000

Lease Receivable 36,556

Dec 31, 1995: Unearned interest income-leases 6344

Interest revenue-leases 6344

January 1, 1996: Cash 38,556

Property tax payable 2,000

Lease Receivable 36,556

Dec. 31, 1996: unearned Interest Revenue 3323

Interest revenue 3323

Note - If the lease agreement transfers ownership of the asset to the lessee (criterion 1) or contains a bargain purchase option (criterion 2), the lease asset is depreciated using the economic life of the asset. Other wise, it is depreciated over the term of the lease. In this case the leased asset reverts to the lessor after a certain period of time.

The discount rate used by the lessee to determine the present value of the minimum lease payments must be used by the lessee to allocate each lease payment between principal and interest.

Bahir Dar University
Lease Amortization Schedule
(Annuity due basis)

<u>Date</u>	<u>Annual lease payment</u>	<u>Executory costs</u>	<u>Interest</u>	<u>Reduction of lease obligation</u>	<u>Lease obligation</u>
Jan 1,1995	Br. 38,556	Br. 2000	-	Br. 36,556	Br. 63,444
Dec 31,1995	-	-	6344	-	69,788
Jan 1,1996	38,556	2000	6344	30,212	33,232
Dec 31,1996	-	-	3323	-	36,555
Jan 1,1997	38,556	2000	3323	33,233	-

Illustration of Accounting for operating lease

Taken the above example, prepare the Journal entries for the lessee and the lessor on Jan. 1, 1995, Dec. 31, 1995.

Solution:

Under the operating method, rent expense and a compensating liability accrues day by day to the lessee as the property is used. Alternatively, each rental receipt by the lessor is recorded as rental revenue. The leased asset is depreciated in the normal manner, with the depreciation expense of the period matched against the rental revenue.

Book of the lessee (BDU)**Book of lessor (Nile Ins. Corp.)****Jan.1,1995-**

Rent expense	38,556	Cash	38,556
Cash	38,556	Rental revenue	38,556

December 31,1995:

	Depreciation Exp.	33,333
No entry	Accumulated Depr.	33,333

Comparison of capital leases with operating lease.

The total charges to operations are the same over the end of the lease term whether the lease is accounted for as capital lease or as an operating lease, under the capital lease treatment the charges are higher in the earlier years and lower in the later years

If the capital lease is employed instead of an operating lease, the following differences occur: -

- an increase in the amount of reported debt
- an increase in the amount of total assets
- a lower income early in the life of the lease, and, therefore, lower retained earnings.

Accounting for a sales type lease

Accounting for sales-type lease is similar to the accounting for a sale of merchandise under the perpetual inventory system. For example, a sale in exchange for a note receivable bearing a fair rate of interest is recorded with a debit to Notes Receivable and a credit to sales for the face amount

of the note (and selling price of the product), and a debit to cost of goods sold and credit to inventories for the cost of the product.

The comparable journal entries peculiarly for a sales-type lease are complicated by three features:

- the interest implicit in the minimum lease payments, which are receivable by the lessor over an extended period
- Un guaranteed residual value
- Initial direct costs such as commissions, legal fees, and documents processing costs incurred by the lessor in negotiating and completing the lease contract.

The journal entries for a sales-type lease are the following

Lease Receivable XX
Cost of goods sold XX
 Unearned Interest revenue XX
 Sales XX
 Inventories XX
(To record sales type lease at inception and cost of leased property)

Cost of goods sold XX
 Cash XX
(to record payments of initial direct costs incurred).

- Lease receivable is reported at the value of
(total minimum lease payments + un guaranteed residual value)
- Cost of goods sold is recorded for cost of the leased property minus
present value of any un guaranteed residual value
- Sales are recorded for the present value of the minimum lease
payments

Example - On January 1, 1998, Global Computer Center leased equipment which had a cost of Br. 11,500 and a fair value of Br. 14,000 to Dib Anbessa Hotel for four years on the following terms:

1. Dib Anbessa Hotel agreed to make four annual rental payments of Br. 4,000 (excluding executory costs) starting on December 31, 1998. The economic life of the equipment is 6 years

with an un guaranteed residual value of Br. 2,500. The Hotel uses straight-line method of depreciation.

2. The hotel agreed to absorb all maintenance costs, insurance and property taxes; Br. 800 of initial direct cost were incurred By Global Computer Center
3. The Hotel was required to return the equipment to Global Computer Center at the end of the lease term, December 31,2003.
4. Global Computer Center's implicit interest rate on January 1,1998 was 10% a year. The hotel has an incremental borrowing rate of 12% a year on January 1, 1998, and couldn't learn Global Computer Center's implicit interest rate.

Required: Make the journal entries for both the lessor and the lessee
on January 1, 1998, December 31, 1998 and Dec. 31, 1999.

Solution:

Before directly we go to making journal entries, we are required to compute the lessor's gross investment in the lease, lessor's net investment in lease, and the amount to be capitalized by the lessee.

$$\begin{aligned}
 \text{Lessor's gross investment in lease} &= \text{Minimum lease payment} + \\
 &\quad \text{Un guaranteed residual value} \\
 &= \text{Br. } 4000 \times 4 \text{ years} + \text{Br. } 2,500 \\
 &= \text{Br. } 16,000 + 2,500 \\
 &= \underline{\underline{\text{Br. } 18,500}}
 \end{aligned}$$

$$\begin{aligned}
 \text{Lessor's net investment in the lease} &= \text{Present value of annual rental} \\
 &\quad \text{payment} + \text{present value of} \\
 &\quad \text{un guaranteed residual value.} \\
 &= \text{Periodic payment} \times \frac{(1 - (1 + i)^{-n})}{i} + \frac{\text{Br. } 2500}{(1 + i)^n}
 \end{aligned}$$

Lessor's net investment in the

$$\text{Lease} = \text{Br } 4000 \times \frac{(1 - (1.1)^{-4})}{0.1} + \frac{2500}{(1.1)^4}$$

$$= \text{Br. } 12,679 + 1708$$

$$= \text{Br. } 14,387 \text{ (Based on an ordinary annuity)}$$

Therefore, the unearned Interest Revenue = Gross Inv't - Net inv't

$$= \text{Br. } 18,500 - 14,387$$

$$= \underline{\underline{\text{Br. } 4113}}$$

The amount to be capitalized to the lessee

= P.V. of the minimum lease payment at incremental

borrowing rate because the lessee couldn't learn the

implicit interest rate of the lessor

$$= \text{Br. } 4000 \times \frac{(1 - 1 + i)^{-n}}{i}$$

$$= 4000 \times \frac{(1 - (1.12)^{-4})}{0.12}$$

$$= \text{Br. } 12,149$$

Journal entries for:

The Lessor (Global Comp. Center) the lessee (Dib Anbessa Hotel)

Jan.1, 1998.

Lease Receivable.... 18,500 Leased Equipment 12,149

Cost of goods sold 9,792 Lease liability 12,149

Unearned Interest Revenue	4113	
Sales	12,679	
Inventories	11,500	
Cost of goods sold	800	No entry
Cash	800	
Dec. 31,1998		
Cash	4000	Lease liability ... 2542
Unearned Interest revenue	1439	Interest expense .1458
Lease Receivable	4000	Cash 4000
Interest revenue	1439	
Dec 31,1998 - No record for depreciation	Depreciation expense ...3037	
	Leased Equipment	3037
	(Br. 12149 ÷ 4)	
Dec 31,1999		
Cash	4000	Interest expense 1153
Unearned Interest revenue	1039	Lease payable 2847
Interest revenue	1039	Cash 4000
Lease Receivable	4000	
Dep. expense	3037	

Leased Equipment

Termination of Sales-type Lease - If a sales-type lease is terminated before the end of the lease term by mutual consent with out penalty, the lessee recognizes a gain or losses. For example, assume that the lease in the fore going illustration is terminated on December 31, 2000 (the end of third year) prior to the rental payment due on the date and prior to the recognition of interest expense and depreciation expense for year 2000. The journal entry to record the termination in the accounting records of the lessee is as follows:

Interest expense (12149-2542-2847) x0.12	811
Liability under capital lease (lease liability)	6760
Depreciation expense	3037
Leased Equipment (12149-6074)	6075
Gain on termination of capital lease	4533

On termination of the sales-type lease, the lessor records the equipment at the lowest of its original cost, present fair value, or present carrying amount, and recognizes any loss represented by the difference from the net investment in the terminated lease. The lessor doesn't recognize a gain on an early termination of a lease because the gain has not been realized.

Sales-type lease with guaranteed residual value-a sales-type lease having a guaranteed residual value requires a slightly different journal entry at the inception of the lease because the guaranteed residual value is part of the minimum lease payments, rather than a separate items, in the computation of the gross investment and the net investment in the lease. For example if Global Computer Center-Dib Anbessa Hotel lease described above had provided for a guaranteed residual value, rather than un guaranteed residual value, of Br 2500, the journal entry on January 1,1998 for Global Computer Center (lessor) would have been as follows:

Lease Receivable	18,500
Cost of goods sold	11,500
Unearned Interest revenue	4113

Sales 14,387

Inventories 11,500

Accounting for a direct Financing lease

In direct financing leases, the gross investment in the lease is computed in the same way as for sales-types leases, but the net investment in the lease equals the difference between the gross investment in the lease and the unearned interest revenue. In this type of lease, unearned interest revenue is the difference between the gross investment in the lease and the cost or carrying amount of the leased property. Any initial direct costs are expensed, and an equal portion of the unearned interest revenue is recognized as interest revenue in the same accounting period. Because the lessor in a direct financing lease is not selling a product, sales and cost of goods sold ledger accounts are not used. In direct financing lease containing a residual value guarantee, or a penalty for failure to renew, the lessor follows the same procedures described for sales-type leases.

Example - Assume that on July 31, year 2005, Tana Transport Corporation leased to Tana Beles project machine with a cost and fair value of Br. 11,127. The initial direct costs incurred by the lessor were Br. 200. The lease was for seven years at an annual rent (excluding executory costs) of Br. 2000 payable at the beginning of each year. The economic life the machine was 9 years, and the estimated un guaranteed residual value at the end of seven years was Br. 1,200. The project uses the straight-line method of depreciation.

Tana Beles Project knows Tana Transport Corporation's 10% implicit interest rate, which is less than its 13% incremental borrowing rate. Tana Beles agreed to pay all executory costs, the collectibility of the lease payments was reasonably predictable, and no additional costs were expected to be incurred by Tana Transport Corp. A machine held for lease ledger a/c is used by the lessor.

Both the lessor and the lessee have a July 31 fiscal year.

Required - prepare the journal entries for both the lessee and the lessor on July 31,2005 and July 31,2006.

Solution:

Tana Transport Corporation (the lessor):

July 31,2005 - Lease Receivable ((Br. 2000x7)+Br. 1200) 15,200

Machine held for lease 11,127

Interest revenue 200

Unearned Interest revenue 3873

(15,000 - 11,127-200)

Operating expense 200

Cash 200

(To record payment of initial direct costs)

. Cash 2000

Lease receivable 2000

July 31, 2006: Cash 2000

Unearned Interest Revenue 933

Lease Receivable 2000

Interest revenue 933

(15,200-3873-2000)x0.10

Journal entries for Tana Beles Project (lessee) - capital lease

July 31,2005- Leased Equipment 10711

* Liability under capital lease 10711

(present value of annuity due)

31 No entry is needed to record initial

direct costs of the lease

31 Liability under capital lease 2000

Cash 2000

July 31,2006 Interest expense 871

$((10711-2000) \times 0.10)$

Liability under capital leases - 1129

Cash 2000

Depreciation expense $(10711 \div 7)$ 1530

Leased Machine - capital lease 1530

- Present value of minimum lease payment

$$= \text{Br. } 2000 \frac{(1 - (1+i)^{-n})}{i} (1+i)$$

$$= \text{Br. } 2000 \frac{(1 - (1.1)^{-7})}{0.1} (1.1)$$

$$= \text{Br. } 10711$$

Note- Liability under capital lease account and lease liability (payable) account are synonymous.

Leveraged Leases

A leveraged lease involves the use of borrowed capital to acquire assets that are then leased out to a business customer (lessee). A leveraged lease is a complex non recourse financial arrangement with lenders as principals in addition to the lessor and the lessee. It is basically driven by tax benefits that accrue to high-income tax payers who participate as lessors. Earning a competitive before income tax return on investment is usually of secondary importance to these tax payers-lessors.

Leveraged leases require special accounting treatment that pertains only to lessors. Lessees involved in leveraged lease arrangements account for these transactions in the same manner as capital leases. Borrowing cash in order to acquire assets intended for the leasing markets doesn't qualify a transaction as a leveraged lease. The fundamental features of a leveraged lease are the followings:

- the lease must other wise meet the definition of a direct financing lease
- the lease must involve three parties a lessee, lessor, and a long-term creditor
- the financing provided by the long-term creditor must be non-recourse as to the general credit of the lessor. That is, in the event of default by the lessor, the long-term creditor, the lease financing participant, has no claim against the lessor beyond the lease payments unremitted by the lessee and, in some cases, repossession of the leased asset
- the lessor's net investment in the lease must decline in the early years of the lease and rise during the later years. (High depreciation and interest expenses in the early years result in operating losses that diminish the lessor's equity in the lease. In later years, as depreciation and interest charged decrease, net investment is increased because of operating profits).

A lease failing to meet all these conditions is considered a regular direct financing lease rather than a leveraged lease.

Example - On January 5, 2001, Bisrat acquired Equipment for leasing at a cost of Br. 1,000,000. To pay for the equipment, Bisrat (the lessor) used Br. 400,000 cash and the proceeds of a Br. 600,000, 9%, non recourse bank loan payable in 15 annual installments beginning on December 31,2001. Also on January 2,2001, Bisrat leased the Equipment to Dashen Brewery on A 15-year lease requiring the Brewery to pay Br. 90,000 annually, beginning on December 31,2001. The un guaranteed residual value of the equipment was estimated at Br. 200,000 to be realized on December

31,2016 (one year after the termination of the lease). For depreciation of the equipment, Bisrat adopted seven-year-economic life, using double declining-balance method for the first two years, sum-of-the-years' digits method for remaining five years, with Br, 100,000 residual value.

Bisrat is entitled to a Br. 100,000 investment tax credit (realizable on December 31,2001). There were no initial direct costs of the lease. The leveraged leased is considered as a direct financing.

Required:

- a. Compute the annual payments of Bisrat on non recourse note
- b. Make the journal entries on January 2,2001 and December 31,2001 on the book of Bisrat.

Solution:

- a. Annual payment on note is computed from the present value (Br. 600,000) of ordinary annuity using 15 years, at the rate of 9%.

$$\text{Present value of OA} = \text{Annual payment} \times \frac{(1 - (1 + i)^{-n})}{i}$$

$$600,000 = \text{Annual payment} \times \frac{1 - (1 + 0.09)^{-15}}{0.09}$$

$$\text{Annual payment} = \underline{\text{Br. 74,435}}$$

- b. Journal entries of leveraged lease on the book of Bisrat (lessor)

January 2,2001 - Equipment held for lease 1,000,000

Cash	400,000
------	---------

Notes payable	600,000
---------------	---------

(To record acquisition of equipment)

Lease Receivable [(90,000x15 -(74,435x15)).... 233,475

Notes payable	600,000
---------------	---------

Income tax payable (for Inv't tax credit)	100,000
Equipment held for lease (1,000,000-200,000)	800,000
Unearned and Deferred Revenue	133,475

(To record lease of equipment)

December 31,2001 - Journal entries

Cash	15,565
Notes payable	74,435
Lease Receivable	90,000

4.3. Sale-Leaseback Arrangements:

In a sale-lease back transactions the owner of an asset sells it and immediately leases it back from the new owner. Sound strange? Maybe, it is common. In sale-leaseback transactions, two things happen:

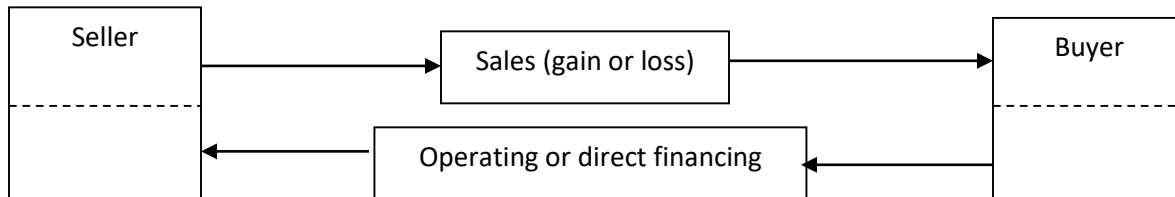
1. The seller-lessee receives cash from the sale of the asset
2. The seller-lessee pays periodic rent payments to the buyer-lessor to retain the use of the asset

The asset itself never leaves the seller-lessee's possession. Some of the reasons the seller-lessee's engage in sale-lease back transactions are the following

- Fully depreciated assets afford no tax saving. Thus, selling them and leasing them back will have tax savings because the lease payments are tax deductible
- In the majority of sale-lease back transactions, the sale of the assets generates immediate cash inflow
- A sale-leaseback often entails a gain on the sale of the asset, which normally must be deferred and amortized over the life of the accompanying leasing arrangements
- Sale-lease back transaction used as a refinancing tool can reduce interest expense. Meaning, if past asset acquisitions are being financed at higher interest rate than now prevails, sale-leaseback is an effective means of refinancing at lower interest rates.

- Sale-lease back can alleviate the tax burden resulting from personal property taxes.

From the lessors' stand point, sale-lease back yields no special advantages or disadvantages; it is simply a financing transaction. The characteristics of a typical sale-lease back arrangement may be diagrammed as follows:



Accounting for Sale-leaseback (SLB) transactions:

Sale-lease back transactions, like regular leases, are accounted for by lessees as either capital or operating leases depending on the criteria described earlier. The same criteria apply to the lessor, plus the two additional criteria relating to the lessors. Lessors account for sale-lease back transactions as direct financing or operating leases. Sales-type leases are not permitted because they would overstate sales revenue and gross margins. Accounting entries for lessors engaged in sale-leaseback are identical to those used to record regular leases.

For lessees, however, accounting entries for sale-leaseback transactions in most cases involve extra considerations;

- For a capital lease, any gain or loss on sale of the asset must be deferred and amortized over the term of the lease and in the same proportion as the leased asset itself is depreciated. For example, the lessee may accept the loss on the sale in exchange for lower lease payments for tax purposes.
- For an operating lease, essentially the same gain or loss deferral and amortization process applies. The deferred gain or loss is amortized over the term of the lease in proportion to each year's gross rental expense
- In amortizing deferred gains over the term of the lease, the credit side of the entry is normally to depreciation expense if the capital lease is involved, but no rent expense if

it is an operating lease. In both cases, the effect is to reduce current expenses. When deferred losses are amortized, the opposite is true.

Illustration:

Ambasel Trading was in need of cash. Its solution was to sell a ware house to Amhara Development Association (ADA) for Br. 95,000 on January 1,1995. The ware house is carried on the Ambasel Trading's books at Br. 80,000, and has an estimated remaining useful life of 10 years, with no residual value. Its fair value was Br. 110,000. There is no transfer of title or bargain purchase option.

- In conjunction with the sale of the warehouse, Ambasel Trading leases the ware house back and enters into a five-year lease with ADA. The ADA's implicit interest rate was 12% which was the same as the Ambasel's incremental borrowing rate.
- Annual lease payments, starting January 1,1995, are Br. 23,530
- Depreciation expense applicable to the lease back portion of this transaction is computed using the straight-line method over five years, with no residual value.

Required-

- Record the journal entries for the ADA and Ambasel Trading leases on January 1,1995 and Dec. 31,1995.
- Prepare the lease Amortization Schedule

Solution:

Ambasel Trading (Seller-lessee)

ADA (Buyer-lessor)

Jan 1,1995 :

Cash	95,000	Warehouse	95,000
Warehouse	80,000	Cash	95,000
Unearned gain on SLB sale	15,000		

Jan 1, 1995:

Leased Warehouse 95,000 Lease Receivable 117,650

Lease liability 95,000 Warehouse 95,000

(To record capital lease) Unearned Interest revenue 22,650

(To record direct financing lease)

Lease liability 23,530 Cash..... 23,530

Cash23,530 Lease receivable 23,530

(to record first lease payment) (to record receipt of first lease payment)

Dec 31, 1995

Depreciation expense 19,000 No entry

(95000 ÷ 5)

Accumulated Depreciation 19,000

(to record dep. expense)

Unearned gain on SLB sale 3,000 No entry

Depreciation expense 3000

$((95,000 \times \frac{1}{5}) - (80,000 \times \frac{1}{5}))$

Interest expense 8576 Unearned Int. revenue 8576

Unearned Interest revenue 8576 Interest revenue 8576

$(95,000 - 23,530) \times 0.12$

b) Lease Amortization Schedule (Annuity Due Basis)

Date	Annuity payment	lease Annual interest	Lease liability (increase)	receivable Decrease	Balance
Jan 1,1995					Br 95,000
Jan 1,1995	Br. 23,530			Br. 23,530	71,470
Dec 31,1995		Br. 8,576		(8,576)	80,046
Jan 1,1996	23,530			23,530	56,516
Dec 31,1996		6,782		(6,782)	63,298
Jan 1,1997	23,530			23,530	39,768
Dec 31,1997		4,772		(4,772)	44,540
Jan 1,1998	23,530			23,530	21,010
Dec 31,1998		2,520		(2,520)	23,530
Jan 1,1999	<u>23,530</u>	-		-	<u>-0-</u>
	<u>Br 117,650</u>	<u>Br 22,650</u>		<u>Br 95,000</u>	

1.4.Disclosure of leases in financial statements: Lessee and Lessor:

6.4.1. Lessee disclosures:

1. For capital lease, disclose

- a. The gross amount of assets recorded under capital leases presented by major classes according to nature or function

- b. Future minimum lease payments in the aggregate and for each for the five succeeding fiscal years, with separate deductions from the total for executory costs (including any profit thereon) included in the minimum lease payments and for the amount of the imputed interest necessary to reduce the net minimum lease payments to present value
 - c. The total of minimum sublease rentals to be received in the future under no cancelable subleases
 - d. Total contingent rentals (these amounts are dependent on some factor other than the passage of time)
- 2. For operating leases having initial or remaining no cancelable lease terms in excess of one year, disclose
 - a. Future minimum rental payments required in the aggregate and for each of the five succeeding fiscal years
 - b. The total of minimum rentals to be received in the future under no cancelable subleases
- 3. For all operating leases, disclose rental expense, with separate amounts for minimum rentals, contingent rentals, and sublease rentals
- 4. Provide a general description of the lessee's leasing arrangements including, but not limited to, the following
 - a. The basis on which contingent rental payments are determined
 - b. The existence and terms of renewal or purchase options and escalation clauses
 - c. Restrictions imposed by lease agreements, such as those concerning dividends, additional debt, and further leasing.

6.4.2. Lessor disclosures:

- 1. For sales-types and direct financing leases, disclose
 - a. The components of the net investment in sales-type and direct financing lease
 - i. Future minimum lease payments to be received, with separate deductions for amounts representing executory costs (including any profit thereon) included in the minimum lease payments and the accumulated allowance for uncollectible minimum lease payments receivable
 - ii. The unguaranteed residual values accruing to the benefit of the lessor

- iii. Unearned interest revenue
 - b. Future minimum lease payments to be received for each of the five succeeding fiscal years
 - c. Total contingent rentals included in income
- 2. For operating leases, disclose
 - a. The cost and carrying amount, if different, of property on lease or held for leasing by major classes of property according to nature or function, and the amount of accumulated depreciation in total
 - b. Minimum future rentals on no cancelable leases in the aggregate and for each of the five succeeding fiscal years.
 - c. Total contingent rentals included in income
- 3. Provide a general description of the lessor's leasing arrangements.

6.5. Other Aspects of Accounting for Leases:

In the preceding pages, we have discussed and illustrated the principal aspects of the lease accounting. In this section, we consider the following topics:

Real Estate Lease

Leases involving land only are accounted for as capital leases by the lessee if the lease contract transfers the title to land to the lessee (criterion 1) or if there is exercise of a bargain purchase option (criterion 2). Otherwise, a lease for land is accounted for as an operating lease. The other criteria can't be used to classify the land lease as capital lease; generally, the amount capitalized in the leased asset-capital lease account is not depreciated.

The accounting for lease involving both land and building depends on which of the criteria are met by the lease, and the ratio of the fair values of the land and the buildings. When the lease property includes both land and a building and the lease transfers ownership or is expected to by exercise of a bargain purchase option, the lessee should record each leased asset separately. The present value of the minimum lease payments is allocated between the leased land and the leased building accounts on the basis of their relative fair (market) values.

When neither of the first two criteria is met, the question arises as to whether the third and fourth criteria apply. Because they logically should apply to the building (because its life is limited) but not to the land (because its life is unlimited), the profession employs an arbitrary guideline. If the fair value of the land is less than 25% of the combined fair value, it is, in effect, ignored and both the lessee and the lessor treat the land and building as a single unit. The single leased asset is depreciated as if the land were not involved. If the fair value of the land is 25% or more of the combined fair value, both the lessee and the lessor treat the land and building as two separate leases. Thus, the land lease is an operating lease, and the building lease is classified and accounted for as any other lease.

However, some of the most common of lease involve leasing only part of a building. In this case, it may be necessary to employ real estate appraisals or replacement cost information to arrive at reasonable estimates of cost or fair value.

Summary of the Chapter

A lease is an agreement that conveys the right from the lessor to a lessee to use property, plant, equipment, or other assets for a stated period against obsolescence and interest rate changes, and provide the lessee with the means of avoiding the recognition of liabilities. For accounting purposes, the lease is considered to be either an operating lease or a capital lease. An operating lease is equivalent to a rental agreement. The lessee pays a periodic fee for the use of the asset. This fee is revenue to the lessor. The asset remains the property of the lessor, who depreciates the asset's cost.

A lessee treats a lease as a capital lease if it meets any one of the four criteria, if it is noncancelable:

(1) the lease transfers ownership title, (2) the lease contains a bargain purchase option (3) the lease term equals or exceeds 75% of the estimated economic life of the leased asset, and (4) the present value of the minimum lease payments equals or exceeds 90% the fair market value of the leased asset.

The lessor treats the lease as a capital lease if in addition to satisfying any one of the criteria for the lessee, it meets two additional criteria: (1) collectibility of all rentals is reasonably assured, and (2) future costs are reasonably predictable or the lessor's performance is substantially completed. The capital leases are categorized into two on the lessor's perspective: Sales-type leases and direct financing leases.

A direct financing lease results in removal of the asset from the lessor's books. Interest revenue is earned over the lease term, whereas, a sales-type lease results in removal of the asset from the lessor's books. Income is earned at the time the lease is signed equal to the difference between the value of the lease and the carrying value of the leased asset on the lessor's books.

A sale lease back arrangement is an agreement in which the seller-lessee sells an asset and then leases back the asset. The seller-lessee obtains cash while incurring a tax deductible lease payment. The buyer-lessor receives the lease payments, depreciates the asset for tax purposes, and may also deduct for taxes any interest on debt used to finance the asset purchase. The seller-lessee accounts for the transaction as a sale purchase. The seller-lessee accounts for the transaction as a sale and for the lease as a capital or operating lease as appropriate. The buyer-lessor accounts for a transaction as a purchase and for the lease as a direct financing lease or sales type lease as appropriate.++

Lease disclosure requirements for both lessees and lessors include data on payments to be made and descriptions of lease arrangements for both capital and operating leases.

Schematic Formula in Accounting for leases:

1. Accounting for a direct financing lease with a Bargain purchase option (BPO) and (or) guaranteed residual value:

At lessor's Book:

The following accounts are recorded as follows:

Lease receivable = Annual lease payment X lease period + Amount of BPO/ guaranteed residual value

Leased Asset = At fair market value

Unearned Interest Revenue = Lease Receivable - Leased Asset

At lessee's Book:

Leased asset is reported at fair value of asset

2. Accounting for a sales-types lease with unguaranteed residual**At Book of the Lessor:**

Amount of lease receivable = amount lease payment X lease period + amount of un guaranteed residual value

Amount of cost of goods sold= Carry value of leased asset - present value of unguaranteed residual value

Amount of sales revenue = Fair value of leased asset - present value of un guaranteed residual value

Amount of unearned interest revenue= Amount of lease receivable - fair value of leased asset

At Book of the lessee:

Amount of lease liability = present value annuity of annual lease payment (excluding the unguaranteed residual value)

Present value of ordinary Annuity = rental payment $\frac{(1 - (1 + i)^{-n})}{i}$

Present value of Annuity due = rental payment $\frac{(1 - (1 + i)^{-n})}{i} (1 + i)$

Illustrative Problem:

Ethiopian Telecommunications Corporation (ETC) leased a satellite transmission device from Satellite Technology Corporation on January 1, 2001. Satellite Technology paid Br. 500,000 for the transmission device.

Terms of the lease agreement and related information:

Lease term 3 year (6 semiannual periods)

Semiannual rental payments ... Br 123,000 - beginning of each period

Implicit interest rate

(Lessee's incremental borrowing rate)..... 12%

Economic life 4 years

Unguaranteed residual value Br. 40,000

Regulatory fees paid by lessor ...Br. 3000/semiannual (included in
rentals)

Lessor's initial direct costs Br. 4,500

Contingent rental payments Br. 4000 if

Revenues exceeds a specified base

Required:

- a) Compute the present value of minimum lease payment
- b) Prepare an amortization schedule that describes the pattern of interest expense over the lease term for ETC
- c) Prepare the appropriate entries for both Ethiopian Telecommunications Corporation and satellite Technology Corporation on January 1 and June 30, 2001.

- d) Prepare the appropriate entries for both the lessor and lessee on Dec. 31, 2003 (the end of the lease term), assuming the device is returned to the lessor and its actual residual value is Br. 14,000 on that date. Assume straight line method of depreciation is used. (The solution is given at the end of this chapter).

Self Test Questions:

Part I: Multiple Choices

Choose the best answer from alternatives provided (The Answer is given at the end of the module)

1. At the inception of a capital lease, the guaranteed residual value should be:
 - a. included as part of minimum lease payments at present value
 - b. included as part of minimum lease payments at future value
 - c. excluded from minimum lease payments
 - d. included as part of minimum lease payments only to the extent that guaranteed residual value is expected to exceed estimated residual value
2. For an operating lease, the lessee records equal monthly rental payments as
 - a. part interest expense and part depreciation expense
 - b. part interest expense and part reduction of lease liability
 - c. entirely a reduction of lease liability
 - d. rent expense
3. On December 31, 2000, ABC Company leased a machine from XYZ Company for a five-year period. Equal annual payments under the lease are Br. 105,000 (including Br. 5,000 annual executory costs) and are due on December 31 of each year. The first payment was made on December 31, 2000, and the second payment was made on December 31, 2001. The five lease payments are discounted at 10% over the lease term. The present value of minimum lease payments at the inception of the lease and before the first annual payment was Br. 417,000. The lease is appropriately accounted for as a capital lease by ABC. In its December 31, 2001, balance sheet, ABC should report a lease liability of
 - a) Br. 317,000 b) Br. 315,000 c) Br. 285,300 d) Br. 248,700

4. On May 1, Year 2, Ocean Company sold machinery to Abegaz Trading for its current fair value of Br. 275,000. Simultaneously, Ocean leased back the machinery at Br. 750 a month for five years, with no option to renew the lease or to reacquire the machinery. On May 1, year 2, the machinery had a carrying amount of Br. 250,000 and a remaining life of 10 years. What is the amount of rent expense for the machinery for the year ended October 31, year 2?
- a) Br 0 b) Br 2,000 c) Br2,500 d) Br4,500 e) None
5. The excess of the fair value of leased property at the inception of the lease over its cost or carrying amount is recorded by the lessor as:
- a. Unearned revenue from a sales-type lease
 - b. unearned revenue from a direct-financing lease
 - c. Manufacturer's or dealer's profit from a sales-type lease
 - d. Dealer's profit from a direct-financing lease

Part II: Review Questions:

1. Compare the way a bargain purchase option and a residual value are treated by the lessee when determining minimum lease payments
2. In a sale-lease back transaction the owner of the asset sells it and immediately leases it back from the new owner. This dual transaction should be viewed as a single borrowing transaction. Why?
3. Differentiate between the "lessee's incremental borrowing rate" and the "the lessor's implicit interest rate "In accounting for leases and indicate when one or the other should be used
4. What is the basic difference to the lessor between a direct financing capital lease and a sales-type capital lease?
5. Differentiate between the accounting procedures used by lessors to account for a sales-type lease and for a direct financing lease.

Part III: Exercises and Problems:

1. On January 2, year 7, Lessee Corporation signed a 10-year non cancelable lease to make annual payments of Br. 30,000 for 10 years beginning January 2, year 7 with a title to machinery to pass to lessee at the end of this period. The machinery has an economic life of 15 years and no residual value. Lessee uses the straight line depreciation method for all its plant assets. Lessee appropriately accounted for the lease transaction as a capital lease, using its incremental borrowing rate of 12% a year. Compute the following for lessee corporation for year 7

- a. present value of minimum lease payment, January 2, year 7

- a. Interest expense for year 7

- b. Depreciation expense for year 7

2. On January 5, year 8, lessor inc. entered into a five-year sales-types lease for equipment with lessee company with the following details:

Annual payment due each January 5, beg. Year 8 Br. 10,000

Bargain purchase option Jan. 5, year 13 Br. 1,000

Cost of equipment in lessor's inventories ledger a/c ... Br. 32,000

Economic life of equipment 8 years

Initial direct costs paid by lessor Jan 5, year 8 Br. 800

Executory costs to be paid to lessor by lessee

each January 5, beginning year 8 Br. 1,500

Lessor's implicit interest rate (known to lessee) 12%

Residual value of equipment none

Lessor used perpetual inventory system.

Prepare Journal entries for lessor, inc., for the year ended December 31 year 8, assuming lessee company made all lease payment when due.

(Round all amounts to the nearest Birr.)

Solution for Illustrative problem

Present value of a minimum lease payment excluding executory costs of Br. 3000.

$$\begin{aligned}
 \text{Pr} &= \text{Rental payments} \frac{(1 - (1 + i)^{-n})(1 + i)^{*}}{i} \\
 &= (\text{Br. } 123,000 - 3000) \frac{(1 - (1 + 0.06)^{-6})(1 + 0.06)}{0.06} \\
 &= \text{Br. } 120,000 \times 5.21236 \\
 &= \text{Br. } 625,483
 \end{aligned}$$

➡ If rental payment is paid at the beginning of the period it is an annuity due; whereas, if rental payment is paid at the end of the period, it is an ordinary Annuity.

Note: The unguaranteed residual value is excluded form minimum lease payments for both the lessee and the lessor.

b) Amortization Schedule for lease payments

a) Period	b) Payments	c) Interest expense at 6%	d) Decrease in balance (b-c)	e) Outstanding balance
Jan 1, 2001				Br. 625,483
Jan 1, 2001	Br. 120,000		Br. 120,000	505,483
June 30, 2001	120,000	0.06 x 505,483 = 30,329	89,671	415,812

Jan 1,2002	120,000	$0.06 \times 415,812 = 24,949$	95,051	320,761
June 30,2002	120,000	$0.06 \times 320,761 = 19,246$	100,754	220,007
Jan 1,2003	120,000	$0.06 \times 220,007 = 13,200$	106,800	113,207
June 30,2003	120,000	$0.06 \times 113,207 = 6793^*$	113,207	0

➔ Adjusted for rounding of other numbers in the schedule.

C) Journal entries on the book of Ethiopian Telecommunications Corporation (Lessee)

Jan 1,2001- Leased Equipment 625,483

Lease payable 625,483

Lease payable 120,000

Regulatory fee expense 3,000

Cash 123,000

June 30, 2001 - Interest expense 30,329

Regulatory fee expense 3,000

Lease payable 89,671

Cash 123,000

Journal entries on the book of Satellite Technology (Lessor)

January 1, 2001:

Lease Receivable (Br. 120,000x6) + Br. 40,000 760,000

Cost of goods sold [Br. 500,000-(40,000x0.70496)] 471,802

Sales revenue 625,483

Unearned interest revenue** 106,319

Inventory on equipment 500,000

$$* \text{ Present value of Br. 40,000} = \frac{\text{Br.40,000}}{(1+i)^n}$$

$$= \text{Br. 40,000} \times \frac{1}{(1+i)^n}$$

$$= \text{Br.40,000} \times \frac{1}{(1+0.06)^6}$$

$$= \text{Br. 40,000} \times 0.70496$$

$$= \underline{\text{Br. 28,198}}$$

** Lessor's Net investment:

Present value of periodic rental payments Br. 625,483

Plus: Present value of the un guaranteed residual value... 28,198

Lessor's net investment in lease Br. 653,681

January 1, 2001 - Selling expense 4,500

Cash (initial direct costs) 4,500

Cash 123,000

Regulatory fee payable (cash) 3,000

Lease Receivable 120,00

June 30, 2001 - Cash 123,000

Regulatory fee payable (cash) 3,000

Lease Receivable 120,000

Unearned interest revenue 32,021

Interest revenue 32,021

(6%(653,681-120,000))

4. Journal entries on December 31, 2003 on the book of lessee

Depreciation expense (625,483 ÷ 3) 208,494

Accumulated depreciation 208,494

Accumulated depreciation 625,482

Leased Equipment 625,483

On the Book of the lessor:

Inventory of equipment (Actual residual value) ... 14,000

Loss on leased equipment (Br. 40,000-14,000) ... 26,000

Lease Receivable40,000

Unearned interest revenue 2265

Interest revenue 2265

CHAPTER SEVEN: ACCOUNTING CHANGES, ERRORS AND ESTIMATION

INTRODUCTION

We know that changes in all aspects are common because the environment doesn't remain stagnant. When the economic and social environments change, everything in this domain will assume the effects.

Dear students, why do such changes in accounting occur? First, the accounting profession may mandate that a new accounting principle is to be used. Second, changes in economic conditions may cause a company to change its method of accounting. Third, changes in technology and in operations may require a company to revise the service lives, depreciation method, or the expected salvage value of depreciable assets.

As GAAPs change in response to changes in the economic and social environment, accountants much find ways to implement the new principles in financial reporting. The new and improved principles and estimates should not be ignored simply to maintain consistency with the financial reporting of the past.

Dear students, you learned in your study of *Financial Accounting I* that two of the qualitative characteristics of accounting information that contribute to its relevance and reliability are consistency and comparability. Though we strive to achieve and maintain these financial reporting attributes, we can't ignore the forces of change. Ours is a dynamic business environment. The economic changes and technology advances constantly transform both day-to-day operations and the flow of information about those operations. In short, change is inevitable. The question then becomes a matter of how best to address change when reporting financial information from year to year.

In this chapter, dear students, we explore some approaches to the adoption of new accounting principles and estimates with the goal of maintaining the maximum degree comparability, and at the same time, gaining the advantages inherent in a change to improved or preferable accounting principles and estimates.

Also in this chapter we discuss methods of correcting and reporting errors that are discovered in previously issued financial statements. Finally, we consider ways in which accountants may develop financial statements from incomplete accounting records.

Learning Objectives

Dear students, after you finish this chapter, you will be able to:

- ➔ Identify the types of accounting changes
- ➔ Describe the accounting for changes in accounting principles, changes in estimates and changes in reporting entity
- ➔ Describe the accounting for correction of errors
- ➔ Know how to prepare and analyze financial statements from incomplete records, and
- ➔ Understand the effects of accounting changes, correction of errors and incomplete records on financial statements.

7.1. Accounting changes

Accounting changes fall into one of three categories:

1. Changes in accounting principles: are changes from one GAAP to another. It may occur in two ways; the first results from adoption of a GAAP different from one used previously for financial accounting.

e.g. Issuance of a new accounting principle by the FASB.

The second type of change in accounting principle involves a change in the method used to measure assets and liabilities.

e.g. Change in the method of computing depreciation.

Change in the method of valuating inventories

Change from completed contract to percentage of completion or

Vice versa.

Change from cost method to equity method or Vice Versa

2. Change in Accounting Estimate: is the revision of an estimate because of new events occurred and as better information becomes available about the probable outcome of future events.

e.g. Change estimate of useful life of depreciable assets

Change estimate of residual value of depreciable asset

Change estimate of bad debts percentage

Change estimate of periods benefited by intangible assets

Revision in the estimated liability for outstanding product warranties.

3. Change in Reporting Entity: is a change from reporting as one type of entity to another type of entity. e.g. If one company combines with another company in a pooling of interests, the financial statements of the current year are not comparable with those of previous years without adequate disclosure of the change in reporting entity and the impact on the financial statements caused by the change.

Errors occur as a result of mathematical mistakes, mistakes in the application of accounting principles, or oversight or misuse of facts that existed at the time financial statements were prepared. A correction of an error is not considered an accounting change and is required when errors are discovered in previously issued financial statements. Examples of corrections of errors include the discovery that material amounts of depreciation expense were not recorded in prior accounting periods, and **a change from an accounting principle that is not generally accepted to one that is generally accepted.**

7.1.1. Change in accounting principle

In the preparation of financial statement there is a presumption that accounting principles once adopted should not be changed. So that meaningful comparisons of successive financial statements may be made. As a result, a change in accounting principle is appropriate only when a business enterprise adopts an alternative GAAP that clearly is preferable. A change from unacceptable accounting principle to an accepted accounting principle is a correction of errors rather than a change in accounting principle. A change in accounting principle is not considered to result from the adoption of a new principle in recognition of events that have occurred for the first time or that

were previously immaterial. For Example, when a depreciation method that is adopted for a newly acquired plant asset is different from the method used for previously recorded assets of a similar class, a change in accounting principle has not occurred.

A business enterprise is permitted to change to a new method only if it can demonstrate that the new method is preferable in that it more fairly presents the enterprise's financial position and results of operations. However, if the accounting principle previously followed was not acceptable or if it was applied incorrectly, a change in generally accepted accounting principles (GAAP) is considered a correction of an error.

For instance, a switch from cash basis of accounting to the accrual basis is considered a correction of an error.

Generally, in opinion No. 20, "Accounting changes" the Accounting principles Board (APB) specifically excluded two events from being considered a change in accounting principle:

These are: 1. the initial adoption of accounting principle to report

transactions occurring for the first time, and

2. The adoption of principle to report transactions that is

substantially different from those previously occurring.

How should a change to a preferable accounting principle or a selection of different method of applying an accounting principle be reported in order to preserve the comparability among current and future financial statements and those issued in the past? The answer to this question depends on the type of change in the accounting principle and the magnitude of its effects on net income. A change that has a material effect on net income is reported more completely than a change that has little effect on net income.

The APB stated that changes in accounting principle that have a material effect on net income should be classified in to one of the following categories:

- Cumulative effect of the change applicable to prior periods
- Restatement of the financial statements previously prepared (issued)

There are three approaches to be suggested for reporting accounting changes and error corrections, in different situations.

1. Retroactive Approach

- ➔ Under this approach, financial statements issued in previous years are restated to reflect the effect of the change whenever those statements are presented again for comparative purposes. An advantage of this approach is that it achieves comparability among financial statements. All financial statements presented are prepared on the same basis i.e., consistency of principles for the years is maintained. It leads the auditors to assure that financial statements prepared in conformity with generally accepted accounting principles applied on the basis consistent with that of the preceding year. However, some argue that public confidence in the integrity of financial data suffers when numbers previously reported as correct are later superseded (replaced) through adjustments.
- ➔ The balance in retained earnings at the beginning of the year is adjusted by the cumulative effect of the change on prior years' income. Any balance other than retained earnings that would be different after the change also are adjusted as part of the same journal entry.

2. Current Approach

The prior years' financial statements are not restated. Instead, the cumulative effect of the change on prior years' income is determined and is included as a separate component of income in the year of the change.

Since prior years' financial statements are not restated under this approach, some argue that financial statement integrity is better maintained. Others argue the opposite-that the lack of consistency and comparability reduces user confidence.

3. Prospective Approach

It requires neither a restatement of prior years' financial statements nor a current recognition of the past effect of the change. Instead, the change is merely implemented and its effects are reflected in the financial statements of the current and future years only.

Cumulative effect of change reported in current Accounting period: The Accounting Principles Board concluded that "most changes in accounting should be recognized by including the cumulative effect, based on a retroactive computation, of changing to a new accounting principle in net income of the period of the change".

The following guide lines should be followed for changes in accounting principle that require recognition of the cumulative effect of the change in the current year's income statement;

1. Financial statements for prior accounting periods included for comparative purposes are presented as previously reported
2. The cumulative effect of the change in accounting principle on the retained earnings balance at the beginning of the accounting period in which the change is made is included in the net income of the period of the change. The amount of the cumulative effect is the difference between the actual amount of retained earnings at the beginning of the period of change, and the amount of retained earnings that would have been reported on that date if the new accounting principle had been applied retroactively for all prior periods. In the computation of cumulative effect, appropriate consideration is given to income taxes. The total and per share amount of the cumulative effect is included in the income statement below any extra ordinary item.
3. Income before extra ordinary items and net income computed on a proforma basis are included in the income statement for the all prior accounting periods presented as if the newly adopted accounting principle had been used in prior periods. Thus, proforma means, "On the assumption that a different accounting principle is used" to prepare the financial statements. If an income statement is presented for the current period only, the actual and proforma amounts (including earnings per share) for the immediately preceding period are disclosed.

Dear students, before you report the cumulative effects on financial statements, you are required to analyze the effects of the changes.

Example: Assume that Henok Company decided at the beginning of 2001 to change from the sum-of-the-years' digital (SOD) method of depreciation to the straight-line method for financial reporting for its equipment. For tax purposes, the company has employed the straight line method and will continue to do so. The equipment originally costs Br. 120,000 in 1999 and has an estimated useful life of 15 years, with no estimated salvage value.

The company has income before extra ordinary items and cumulative effects of changes in accounting principles of Br. 130,000 in 2001 and Br. 111,000 in 2000. Also, Henok comp. has an extraordinary loss (net of tax) of Br. 30,000 in 2001 and an extraordinary gain (net of tax) of Br10,000 in 2000. The tax rate is 40%.

Required: prepare the journal entry to record the change in accounting principle in year 2001.

Solution:

Year	SOD dep.	Straight-line dep.	Difference	Tax effect (40%)	Effect net income (net of tax)
1999	$\frac{15}{120} \times \text{Br.}120,000 = 15,000$	8,000	7,000	2,800	4,200
2000	$\frac{14}{120} \times \text{Br.}120,000 = 14,000$	8,000	6,000	2,400	3,600
Total	Br. 29,000	<u>Br. 16,000</u>	<u>Br. 13,000</u>	<u>Br. 5,200</u>	<u>Br. 7,800</u>

The entry made to record this change to straight line depreciation in 2001 should be:

Accumulated depreciation 13,000

Deferred tax asset 5,200

Cumulative effect of change in

accounting principle..... 7,800

Income statement Presentation

The cumulative effect of the change in accounting principle should be reported on the income statement between the captions "extra ordinary items" and "net income" .The cumulative effect is reported on income statement **without pro forma amounts** as follows:

	2001	2000
Income before extra ordinary items & cumulative effect of a change in accounting principle.....	Br. 130,000	Br. 111,000
Extra ordinary items, net of tax	(30,000)	10,000
Cumulative effect on prior year of retroactive application of new depreciation method, net of tax	<u>7,800</u>	<u> </u>
Net income	<u>Br. 107,800</u>	<u>Br. 121,000</u>

Proforma amounts

Proforma amounts permit financial statements users to determine the net income that would have been shown if the newly adopted principle had been in effect in earlier periods. In other words, how would Henok Company's income be reported if the straight-line method had been used in 2000? To determine the proforma amounts, the prior year (2000) is restated, assuming that the straight-line method is used. The computation is as follows:

	<u>Year 2001</u>	<u>Year 2000</u>
Income before extraordinary item.....	Br. 130,000	Br. 111,000
Extraordinary item, net of tax.....	(30,000)	10,000
Excess of SOD over straight-line	<u> </u>	<u>3,600</u>

Net income.....	<u>Br. 100,000</u>	<u>Br. 124,600</u>
-----------------	--------------------	--------------------

When a cumulative-effect-type accounting change is made during the first interim period of a fiscal year, the cumulative effect of the change on retained earnings at the beginning of that fiscal year is included in net income of the first interim period.

When a cumulative-effect-type accounting change is made in other than the first interim period of a fiscal year, no cumulative effect of the change is included in net income of the period of change. The cumulative effect of the change on retained earnings at the beginning of that fiscal year is included in restated net income of the first interim period of the fiscal year in which the change is made.

Changes Requiring Restatement of prior periods' financial statements

Some changes in accounting principle are reported through restatement of the financial statements of prior accounting periods, including the following:

- ➡ A change from LIFO method of pricing inventories to another method of pricing inventories
- ➡ A change in the method of accounting for construction-type contract
- ➡ A change in reporting entity
- ➡ A change from an acceptable accounting principle to another acceptable accounting principle for a closely held corporation issuing financial statements to the public for the first time.

When prior period financial statements are restated, the nature of the change in accounting principle, as well as the justification for the change, is disclosed for the accounting period in which the change is made.

Illustration - Omeded Trading had used the LIFO method and decided to change to the FIFO method. The inventory as reported at the end of 1999 using LIFO would have been Br. 20,000 higher using FIFO.

Retained earnings had been reported at the end of 1998 and 1999 as br. 240,000 and Br. 260,000 respectively, under LIFO method. Those amounts reflecting the FIFO method would have been Br. 250,000 and Br. 272,000, respectively. 1999 net income had been reported at the end of 1999 as Br. 28,000 (LIFO method) but would have been Br. 30,000 using FIFO. After changing to FIFO, 2000 net income was Br. 36,000. Dividends of Br. 8,000 were paid each year. The tax rate is 40.

Required: a. Prepare the journal entries to record the change in accounting

principle at the beginning of 2000.

b. Compute the balance of retained earning or December 31, 2000

Solution: a) Inventory (additional inventory) 20,000

Retained earnings 12,000

Deferred tax liability 8,000

(40% x 20,00)

b) Retained earning at Jan. 1, 1999 Br. 240,000

Prior period adjustment due to change

from LIFO to FIFO method 10,000

(250,000 - 240,000)

Balance at Jan 1, 1999 as adjusted Br. 250,000

Net income (restated to FIFO) 30,000

Cash dividends (8,000)

Balance at Dec. 31, 1999 Br. 272,000

Net income (using FIFO) 36,000

Cash dividends (8,000)

Balance at December 31, 2000 Br. 300,000

Note -When a company changes to LIFO inventory method from another inventory method, accounting records of prior years usually are

inadequate to determine the cumulative income effect of the change or to determine proforma disclosures for prior years. Because of the impracticality of doing so, a company changing to LIFO doesn't report the cumulative income effect in current income nor revise the balance in retained earnings. Instead, it is disclosed in foot note to the financial statements with necessary descriptions.

6.1.2. Change in Accounting Estimate

Much of accountants' work involves the use of subjective judgment. The preparation of financial statements requires estimating the effects of future events. The following are examples of items that require estimates:

- ➔ Un collectible receivables
- ➔ Inventory obsolescence
- ➔ Useful lives and salvage values of assets
- ➔ Periods benefited by deferred costs
- ➔ Liabilities for warranty costs and income taxes

Future conditions and events and their effects cannot be perceived with certainty; therefore, estimating requires the exercise of judgment. Accounting estimates will change as new events occur, as more experience is acquired, or as additional information is obtained.

Changes in estimates must be handled prospectively. That is, no changes should be made in previously reported results. Opening balances are not adjusted, and no attempt is made to catch up for prior periods. Financial statements of prior periods are not reported. Instead, the effects of all changes in estimates are accounted for in

- ➔ the period of change if the change affects that period only
- ➔ the period of change and future periods if the change affects both.

As a result, changes in estimates are viewed as normal recurring corrections and adjustments, the natural result of the accounting process, and retroactive treatment is prohibited.

Differentiating between a change in an estimate and a change in an accounting principle is sometimes difficult. When ever it is impossible to identify whether a change in principle or a change in estimate has occurred, the change should be considered a change in estimate. Similarly, a problem may occur in differentiating between a change in estimate and a correction of error. The general rule is that careful estimates that later prove to be incorrect should be considered changes in estimates.

For example, assume that management had estimated the economic useful life of a plant asset at 10 years, with no residual value at the end of 10 years. The cost of the asset Br. 20,000 has been depreciated Br. 2,000 a year for seven years. At the end of the eighth year, management determined that the asset had a remaining economic life of four years and that its net residual value would be Br. 500 at the end of 12 years of use. The revised annual depreciation expense over the remaining economic life of the asset is computed as follows:

Cost of plant asset	Br. 20,000
Less: depreciation for year 1 through 7	<u>14,000</u>
(Br. 2000x7)	
Carrying amount at the beginning of year 8.....	Br. 6,000
Less: Estimated net residual value at	
end of year 12	<u>500</u>
Amount to be depreciated for the next	
5 years	Br.. 5,500
Revised annual depreciation for years 8	
through 12 (Br. 5500 ÷ 5 years).....	<u>Br. 1,100</u>

In certain instance, a change in accounting principle may be accompanied by a change in accounting estimate.

In such cases, it is difficult to separate the effect of the change in principle from the effect of the change in estimate. For example, a business enterprise that has been deferring and amortizing certain costs might decide to change to a policy of recognizing such costs as expenses because the future benefits of the costs have become doubtful. This type of change often is related to the process of obtaining additional information that calls for revision of the original judgment that the costs will provide future benefits. Because the new accounting method was adopted as a result of the change in estimated future benefits, such a change is accounted for as a change in accounting estimate.

7. 1.3. Change in Reporting Entity

A reporting entity can be a single company or it can be a group of companies that reports a single set of financial statements. For example, the consolidated financial statements of Midroc Ethiopia report the financial position and results of operations, not only for parent Midroc Ethiopia company but also for its subsidiaries which include Midroc Construction, Moha Soft Drinks, Midroc Gold, and, etc.

A change in reporting entity occurs as a result of

- ➔ Presenting consolidated financial statements in the place statements of individual companies
- ➔ Changing specific companies that constitute the group for which consolidated or combined statements are prepared, or
- ➔ A business combination accounted for as a pooling of interests.

A change in reporting entity is reported by restating all previous period financial statements as if the new reporting entity existed in those periods. In the first set of financial statements after the change, a disclosure note should describe the nature of the change and the reason it occurred. Also the effect of the change on net income, income before extraordinary items, and related per share amounts should be indicated for all periods presented (change in reporting entity will be more discussed in Advanced accounting)

Activity

1. What are two types of accounting changes? Briefly describe each type.

2. Give four examples of changes in accounting principles?

3. Distinguish the difference between changes in estimates and correction of errors.

6.2. Correction of Errors

Dear students, in the universe, except God, no one is absolutely perfect. No business, large or small, is immune from errors. The risk of material errors, however, may be reduced through the installation of good internal control and the application of sound accounting procedures.

The following are examples of accounting errors;

1. A change from an accounting principle that is not generally accepted to an accounting principle that is acceptable
2. Mathematical mistakes that result from adding, subtracting, and so on
3. Changes in estimates that occur because the estimates are not prepared in a good faith.
4. An oversight such as the failure to accrue or defer certain expenses and revenues at the end of the period
5. A misuse of facts such as the failure to use salvage value in computing the depreciation base for straight line approach

6. The incorrect classification of a cost as an expense instead of an asset or vice versa

As soon as the errors are discovered, they must be corrected by proper entries in the accounts and reported in the financial statements. The profession requires that correction of errors be treated as prior period adjustment, be recorded in the year the error was discovered and be reported in the financial statements as an adjustment to the beginning balance of retained earnings.

Once the nature of the distortion created by error is understood, it is possible to determine the effects of similar errors on financial statements:

➔ **Errors Affecting Only Balance Sheet Amounts** - An error that affects only balance sheet amounts may arise because;

- Journal entries were made of the wrong ledger account
- transactions were omitted from the journal, or
- the amounts of certain journal entries were wrong

e.g. If accounts payable is debited instead of accounts receivable, total assets and total liabilities are understated by the same amount.

➔ **Errors Affecting Only Income Statements**- an error that is confined to income statement amounts has no effect on net income. Such errors generally arise through misclassification. For example, an expense or revenue items may be debited or credited to the wrong ledger accounts.

➔ **Errors Affecting both the balance sheet and the Income**

Statement: Errors that affect both financial statements fall in

to two categories:

- Errors that will be counter balanced in the next accounting

period, and

- Errors that will not be counter balanced in the next accounting period

An example of a counter balanced error is the failure to record accrued wages at the end of the accounting period. The liability wages payable is understated at the end of the period and because

wages expense is understated, net income is overstated in the period of the error is made. In the following period, the payment of unrecorded accrued wage is debited to wages expense; thus, wages expense for the second period is overstated. As a result net income of the second period is understated by an amount equal to the overstatement of the previous period.

Other errors affect both the balance sheet and the income statement, but are not counter balanced in the next accounting periods. For instance, suppose an acquisition of the equipment is debited to expense by mistakes.

Steps to correct an error are the followings

1. A journal entry is made to correct any account balances that are incorrect as the result of the error
2. Previous years financial statements that were incorrect as a result of the error are retroactively restated to reflect the correction, for all years reported again for comparative purposes.
3. If retained earnings are one of the accounts incorrect as a result of the error, the correction is reported as prior period adjustment to the beginning balance in a statement of share holders' equity (or statement of retained earnings if that is presented instead).

Analyzing the effect of errors:

When an error is discovered, the accountant must analyze the effect of the error on financial data for prior, current and subsequent accounting periods. In analyzing the effect of the errors, we have to follow the following steps.

Step 1- Determine the correct entry if the error hadn't been occurred

Step 2- Make the incorrect journal entry

Step 3- Prepare the correcting entries and report on financial statements.

Assume Saron Trading has reported an over stated amount of net income of Br. 5,000 resulting from sales during the year 2003. Show and analyze the effect of such errors in year 2003, 2004, and 2005.

<u>Income statement</u>	<u>Year 2003</u>	<u>Year 2004</u>	<u>Year 2005</u>
Net income-	overstated	-Net income-understated	-Error has fully Counterbalanced.
-Cost of goods sold-	Understated	-Cost of goods sold- overstated	No correction is Required
- Ending Inventories-	Overstated	-Beginning Inventories- Understated	

Balance Sheet:

Assets. Overstated. -Balance sheet items are -No correction is

Retained Earnings - Overstated. Properly stated. required.

If the above error is discovered in year 2003 before the ledger accounts are closed, a separate correcting entry is not necessary. The ending inventories under the periodic inventory system are recorded at the time closing entries are made, and it is simple matter to use the revised inventory amounts in the closing (or adjusting) entries.

If the error is discovered at any time prior to the closing of the ledger accounts for year 2004, the correcting entry is:

Retained Earning (net income, year 2003) 5000

Inventories (Dec 31, 2003) 5000

If the error in the inventories at the end of year 2003 were not discovered until 2005, no correcting entry would be required, because the error has been fully counter balanced.

If the year 2003 and year 2004 financial statements were to be corrected retroactively, this could be accomplished by the changing the inventories and retained earnings amounts in these statements or by the use of working paper. The working paper is used to analyze the error and its effects on financial statements, and it also serves as the underlying support for a single correcting entry to bring the accounting records up to date.

Illustration

An audit of accounting records of Fana Trading Company early in year 8 disclosed the following errors affecting the financial statements for year 6 and year 7.

1. Unexpired insurance was omitted from the accounting records; insurance premiums were debited to insurance expense at the time of payment. The correct amount of unexpired insurance at the end of year 6 and year 7 were Br. 550 and Br 980 respectively.
2. No journal entry had been made to accrue interest on notes payable at the end of the year. However, the interest payable at the end of year 6 was Br. 1,700 and at the end of year 7 it was Br. 480
3. Interest on Notes receivable was credited to interest revenue when received. At the end of year 6, interest receivable amounted to Br. 4500, and at the end of year 7 it was Br. 840.
4. Fana rented parts of its land, receiving rent in advance; receipts were credited to Rent Revenue. Unearned rent at the end of year 6 and year 7 were Br. 1,800 and Br. 740 respectively
5. Fana is subject to income taxes at a rate of 45% of taxable income

Fana Trading Company reported net income of Br. 20,000 and Br. 16,000 for year 6 and year 7, respectively.

Required

- a. prepare working paper for analysis of errors
- b. prepare the journal entries to correct the errors after accounts are closed at the end of year 7
- c. Prepare the journal entries to correct errors before accounts are closed

Solution: a)

Fana Trading Company

Working Paper for Analysis of Errors

Dec 31, year 7

Explanation	<u>Net income for year 6</u>		<u>Net income for year 7</u>		<u>Balance sheet a/cs requiring correction</u>		
	<u>Dr</u>	<u>Cr</u>	<u>Dr</u>	<u>Cr</u>	<u>Dr</u>	<u>Cr</u>	<u>accounts</u>
1. Unexpired Insurance omitted							
Dec 31, year 6		Br550	Br550				
Dec 31, year 7				Br980	Br980		prepaid Insurance
2. Accrued Interest on Notes payable omitted:							
Dec 31, year 6	Br1700			1700			
Dec 31, year 7			480			480	Interest payable
3. Accrued Interest on N/R							
Dec 31, year 6		450	450				
Dec 31, year 7				840	840		Interest Rec.
4. Unearned rent omitted							

Dec 31, year 6	1800			1800			
Dec. 31, year 7	-	-	<u>740</u>	-	-	<u>740</u>	Unearned Rent
Total balance	Br3,500	Br1000	Br2220	Br5320			
Increase (or decrease) in income before taxes	net balance of Br2,500		net balance of Br3100				
5. Revision of income taxes (45%)							
Year 6 Income tax expenses overstated	Br 1,125				1,125		Inc/tax refund receiv.
Year 7 Income taxes expense understated		-	<u>(1395)</u>	-		1395	Income tax payable
Increase (or decrease in net income)	Br(1375)	1705		330	2945 net 330	2615	Retained Earning
Net income, as originally reported	<u>20,000</u>	<u>16,000</u>					
Corrected Net income	<u>Br18,625</u>	<u>17,705</u>					

b) Journal Entries

Prepaid insurance		980					
Interest receivable		840					
Income tax refund Receivable		1,125					
Retained Earnings			330				
Interest payable			480				
Income tax payable			1395				
Unearned Rent.....			740				

c) Prepaid Insurance 980

Interest Receivable 840

Income tax Refund Receivable 1125

Retained Earnings (NI, year 6) 1375

Income taxes expense (year 7) 1395

Insurance expense (980-550) 430

Interest expense (1700-480) 1220

Interest revenue (840-450) 390

Rent Revenue (1800-740) 1060

Interest payable 480

Unearned Rent 740

← Correction of revenue and expense accounts to reflect Br 1705 increase in net income for year 7

Note: If comparative financial statements are to be prepared, there remains the problem of revising the financial statements of prior years to reflect the correction of errors. A correcting entry always revises balance sheet ledger accounts to their corrected balances on any prior date. Similarly, once the revenue and expense accounts for a year have been closed, a journal entry to correct errors has no effects on any revenue and expense accounts for that year.

6.3. Financial statements from Incomplete Records

The heart of the double-entry accounting system is the analysis of the effect of each business transaction or event on the accounting equation.

Assets=Liabilities + owners' equity. Many small business enterprises operate with varying degrees of success with only minimal accounting records with out the benefit of a complete accounting system.

Balance sheet form incomplete accounting records:

A business enterprise having no formal accounting system still must record certain basic information. For example, a record of cash received and checks written and a record of amounts receivable from customers and amount payable to creditors is essential. It is possible to prepare a balance sheet on any date for such an enterprise from various sources of information.

Cash may be determined by count and by reconciliation of bank statements. Amounts receivable from customers may be summarized from unpaid sales invoices. Inventories may be counted, weighed, or measured, and their costs determined from suppliers' invoices. Amounts payable to creditors may be determined from invoices and monthly statements. Ownership equity is the difference between the amounts assigned to assets and to liabilities.

Income statement from Incomplete Accounting Records:

In order to prepare and issue income statement from incomplete accounting records (single accounting records), the amount of net income first should be determined.

One way to measure net income from single accounting records is to analyze the change in owners' equity during an accounting period as follows:

Net income:

Owners' equity at end of accounting period	xx
Less: owners' equity at beginning of period	(xx)
Total increase (decrease) in owners' equity	xx (xx)
Add: Amounts with drawn by owners	xx
Less: Additional Investments by owners	xx
Net income (Net loss) for period	xx (xx)

In addition, cash receipts and cash payments data, a list of assets at the beginning and end of the account period, list of liabilities at the beginning and end of the period, comparative balance sheet, and other miscellaneous sources are used to prepare income statements.

To compute the gross sales, other revenues, Gross purchases, cost of goods sold, and operating expenses, it is similar to what you have discussed in comparison of cash basis and accrual basis of accounting.

Summary of the Chapter

Placing new accounting principles and practices, and new accounting estimates in to the stream of financial statements will make current period statements in consistent with those of prior periods. However, new and improved principles and estimates should not be ignored simply to maintain consistency with the financial reporting of the past.

In **opinion, No. 20. "Accounting changes,"** the APB was mainly concerned with two issues: (1) the reporting of accounting changes, and (2) the accounting for corrections of errors in previously issued financial statements

Accounting changes are classified in to three major categories: changes in accounting principles, changes in accounting estimates and changes in reporting entity. However, a correction of error is not considered an accounting change and it is required only when errors are discovered in previously prepared financial statements. Errors may be resulted from mathematical computations,

mistakes in the application of accounting principles, or miscues of facts or oversight that existed at the time the financial statements were prepared.

Changes in accounting and corrections of errors are resolved and adjusted on financial statements using retroactive, current or prospective approaches. First, the effects of changes in accounting are determined then analyzing the effects on financial statements will be made.

Certain companies require issuing financial statements on monthly, quarterly, or semiannual basis. In certain cases they prepare using incomplete financial data or using single-accounting entries.

Self Test Questions

Part I: Multiple Choices

1. When a cumulative-effect type change in accounting principle is made during a year, the cumulative effect on the retained earnings is computed:
 - a. During the year using a weighted average
 - b. As of the date of the change
 - c. As of the beginning of the year in which the change is made
 - d. As of the end of the year in which the change is made
 - e. In some other manner
2. ABC Company purchased equipment on January 2, 2000, for Br. 480,000 with no salvage value at the end of six years from date of acquisition. The machine was depreciated under the straight-line method. On January 2, 2003, the company determined the equipment had an economic life of 8 years from the date acquisition, with no residual value. An accounting change was made for the year ended Dec. 31, 2003. What is the amount of depreciation expense for the equipment for the year ended Dec. 31, 2003?
 - a. Br 0 b. Br. 30,000 c. br. 48,000 d. Br. 60,000 e. None
3. A business enterprise changed from straight-line method of depreciation for previously recorded plant assets to double declining balance method. The cumulative effect of the change on the amount of retained earnings at the beginning of the accounting period in which the change is made is reported separately as a(an)
 - a. Extra ordinary item
 - b. Component of income after extra ordinary item

- c. Component of income from continuing operations
 - d. Prior period adjustment
- 4. Proforma effects of retroactive application usually are reported in the income statement for a change
 - a. in the economic lives of depreciable plant assets
 - b. in the residual values of depreciable plant assets
 - c. from the straight-line method of depreciation to the sum-of-the-year's- digits method for previously recorded plant assets
 - d. from presenting financial statements for individual companies to presenting consolidated financial statements
- 5. A typical counter balancing error that affects both the income statement and the balance sheet of an accounting period
 - a. is offset by misstatement, in opposite direction, of net income of the succeeding period
 - b. also misstates net income of several succeeding accounting periods
 - c. is offset by a misstatement, in the opposite direction, of total owners' equity in the balance sheet of the succeeding year
 - d. is offset by a misstatement, in the opposite direction, of both net income and total owners' equity in the financial statements of the succeeding period

Part II: Review Questions

1. Distinguish the changes in accounting and correction of an error
2. Mention at least three examples of changes in accounting principles that require the retroactive restatement of financial statement for prior periods.
3. How a material error in previously issued financial statements reported in the accounting period the error is discovered?
4. Describe the situation in which a change in accounting principle is considered appropriate

Part III: Problems

1. Hope company, which began operations on January 3, 2003, used an accelerated method of depreciation for machinery until Jan 3, 2005. On that date, Hope adopted the straight line method of depreciation for both newly acquired and previously acquired machinery. Information concerning depreciation expenses under each method follows.

Depreciation expense		
<u>Year ended</u>	<u>Accelerated method</u>	<u>Straight-line</u>
Dec 31, 2003	Br. 400,000	Br. 300,000
Dec 31, 2004	530,000	375,000
Dec 31, 2005	600,000	400,000

The income tax rate for year 2003 through year 2005 was 45%. Compute the equivalent effect of Hope Company's change in accounting principle for its income statement for year 2005.

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