

Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 1

ACCOUNTING IN ACTION

Accounting Principles, Eighth Edition

Study Objectives

1. Explain what accounting is.
2. Identify the users and uses of accounting.
3. Understand why ethics is a fundamental business concept.
4. Explain generally accepted accounting principles and the cost principle.
5. Explain the monetary unit assumption and the economic entity assumption.
6. State the accounting equation, and define assets, liabilities, and owner's equity.
7. Analyze the effects of business transactions on the accounting equation.
8. Understand the four financial statements and how they are prepared.

Accounting in Action

What is Accounting?

- Three activities
- Who uses accounting data

The Building Blocks of Accounting

- Ethics in financial reporting
- Generally accepted accounting principles
- Assumptions

The Basic Accounting Equation

- Assets
- Liabilities
- Owner's equity

Using the Basic Accounting Equation

- Transaction analysis
- Summary of transactions

Financial Statements

- Income statement
- Owner's equity statement
- Balance sheet
- Statement of cash flows

What is Accounting?

The purpose of accounting is to:

- (1) **identify, record, and communicate** the economic events of an
- (2) organization to
- (3) interested users.

What is Accounting?

Three Activities

Illustration 1-1
Accounting process

Identification



Select economic events (transactions)

Recording



Record, classify, and summarize

Communication



Prepare accounting reports



Analyze and interpret for users

The accounting process **includes**
the bookkeeping function.

Who Uses Accounting Data?

Internal Users

Human Resources

Finance

Marketing

Management

There are two broad groups of users of financial information: internal users and external users.

IRS

Investors

Labor Unions

Creditors

Customers

SEC

External Users

Who Uses Accounting Data?

Common Questions Asked

User

- | | | |
|---|---|-----------------|
| 1. Can we afford to give our employees a pay raise? | ➔ | Human Resources |
| 2. Did the company earn a satisfactory income? | ➔ | Investors |
| 3. Do we need to borrow in the near future? | ➔ | Management |
| 4. Is cash sufficient to pay dividends to the stockholders? | ➔ | Finance |
| 5. What price for our product will maximize net income? | ➔ | Marketing |
| 6. Will the company be able to pay its short-term debts? | ➔ | Creditors |

Who Uses Accounting Data?

Discussion Question

Q1. "Accounting is ingrained in our society and it is vital to our economic system." Do you agree? Explain.

See notes page for discussion

The Building Blocks of Accounting

Ethics In Financial Reporting

Standards of conduct by which one's actions are judged as right or wrong, honest or dishonest, fair or not fair, are **Ethics**.

- Recent financial scandals include: **Enron**, **WorldCom**, **HealthSouth**, **AIG**, and others.
- Congress passed Sarbanes-Oxley Act of 2002.
- Effective financial reporting depends on sound ethical behavior.

Review Question

Ethics are the standards of conduct by which one's actions are judged as:

- a. right or wrong.
- b. honest or dishonest.
- c. fair or not fair.
- d. all of these options.

Review Question

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The Building Blocks of Accounting

Various users
need financial
information



Financial Statements

- Balance Sheet
- Income Statement
- Statement of Owner's Equity
- Statement of Cash Flows
- Note Disclosure



The accounting profession
has attempted to develop
a set of standards that
are generally accepted
and universally practiced.



**Generally Accepted
Accounting
Principles (GAAP)**

The Building Blocks of Accounting

Organizations Involved in Standard Setting:



Securities and Exchange Commission (SEC)

<http://www.sec.gov/>



Financial Accounting Standards Board (FASB)

<http://www.fasb.org/>



International Accounting Standards Board
(IASB)

<http://www.iasb.org/>

The Building Blocks of Accounting

Cost Principle (Historical) - dictates that companies record assets at their cost.

Issues:

- Reported at cost when purchased and also over the time the asset is held.
- Cost easily verified, whereas market value is often subjective.
- Fair value information may be more useful.

Assumptions

Monetary Unit Assumption - include in the accounting records only transaction data that can be expressed in terms of money.

Economic Entity Assumption - requires that activities of the entity be kept separate and distinct from the activities of its owner and all other economic entities.

- Proprietorship.
- Partnership.
- Corporation.

Forms of
Business Ownership

Forms of Business Ownership

Proprietorship

- Generally owned by one person.
- Often small service-type businesses
- Owner receives any profits, suffers any losses, and is personally liable for all debts.

Partnership

- Owned by two or more persons.
- Often retail and service-type businesses
- Generally unlimited personal liability
- Partnership agreement

Corporation

- Ownership divided into shares of stock
- Separate legal entity organized under state corporation law
- Limited liability

Assumptions

Review Question

Combining the activities of Kellogg and General Mills would violate the

- a. cost principle.
- b. economic entity assumption.
- c. monetary unit assumption.
- d. ethics principle.

Assumptions

Review Question

Combining the activities of Kellogg and General Mills would violate the

- a. cost principle.
- b. economic entity assumption.
- c. monetary unit assumption.
- d. ethics principle.

Forms of Business Ownership

Review Question

A business organized as a separate legal entity under state law having ownership divided into shares of stock is a

- a. proprietorship.
- b. partnership.
- c. corporation.
- d. sole proprietorship.

Forms of Business Ownership

Review Question

A business organized as a separate legal entity under state law having ownership divided into shares of stock is a

- a. proprietorship.
- b. partnership.
- c. corporation.
- d. sole proprietorship.

The Basic Accounting Equation

$$\boxed{\text{Assets}} = \boxed{\text{Liabilities}} + \boxed{\text{Owner's Equity}}$$

Provides the **underlying framework** for recording and summarizing economic events.

Assets are claimed by either creditors or owners.

Claims of creditors must be paid before ownership claims.

The Basic Accounting Equation

$$\boxed{\text{Assets}} = \boxed{\text{Liabilities}} + \boxed{\text{Owner's Equity}}$$

Provides the **underlying framework** for recording and summarizing economic events.

Assets

- Resources a business owns.
- Provide future services or benefits.
- Cash, Supplies, Equipment, etc.

The Basic Accounting Equation

$$\text{Assets} = \text{Liabilities} + \text{Owner's Equity}$$

Provides the **underlying framework** for recording and summarizing economic events.

Liabilities

- Claims against assets (debts and obligations).
- Creditors - party to whom money is owed.
- Accounts payable, Notes payable, etc.

The Basic Accounting Equation

$$\text{Assets} = \text{Liabilities} + \text{Owner's Equity}$$

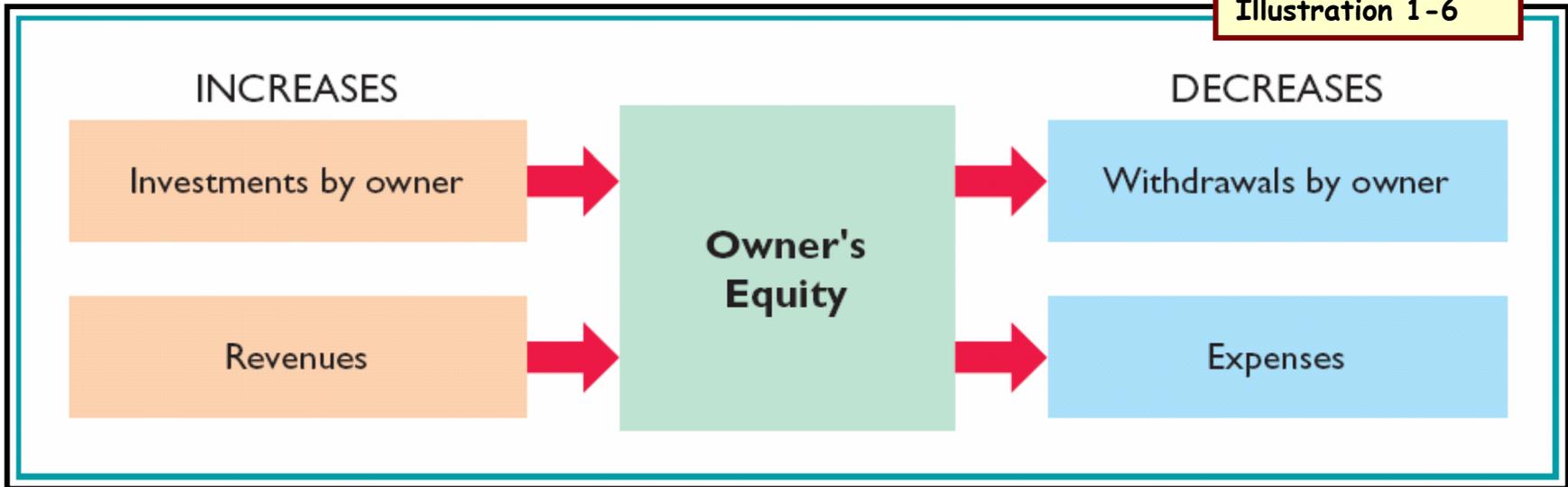
Provides the **underlying framework** for recording and summarizing economic events.

Owner's Equity

- Ownership claim on total assets.
- Referred to as residual equity.
- Capital, Drawings, etc. (Proprietorship or Partnership).

Owners' Equity

Illustration 1-6

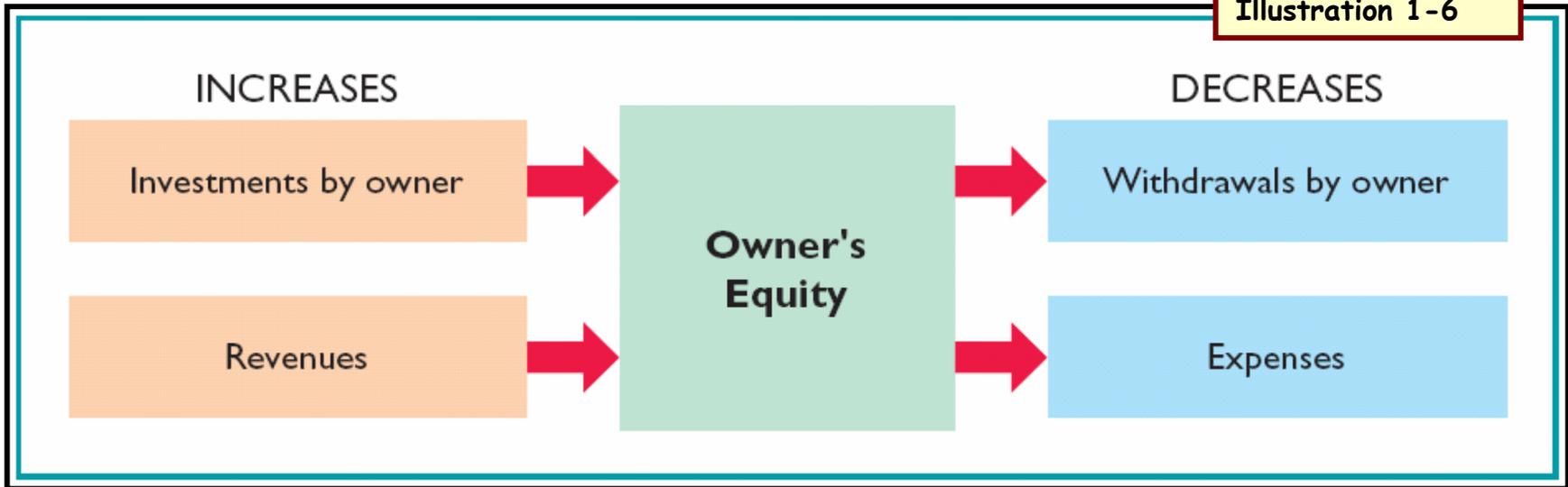


Revenues result from business activities entered into for the purpose of earning income.

Common sources of revenue are: sales, fees, services, commissions, interest, dividends, royalties, and rent.

Owners' Equity

Illustration 1-6



Expenses are the cost of assets consumed or services used in the process of earning revenue.

Common expenses are: salaries expense, rent expense, utilities expense, tax expense, etc.

Using The Basic Accounting Equation

Transactions are a business's economic events *recorded* by accountants.

- May be external or internal.
- Not all activities represent transactions.
- Each transaction has a **dual effect** on the accounting equation.

Transactions (Question?)

Q1-15: Are the following events recorded in the accounting records?

Event

Supplies are purchased on account.

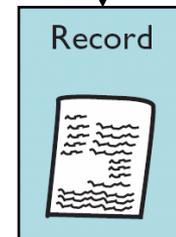
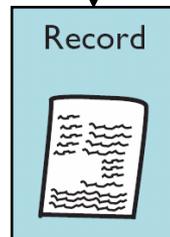
An employee is hired.

Owner withdraws cash for personal use.

Criterion

Is the financial position (assets, liabilities, or owner's equity) of the company changed?

**Record/
Don't Record**



Transactions

Discussion Question

Q18. In February 2008, Paula King invested an additional \$10,000 in her business, King's Pharmacy, which is organized as a proprietorship. King's accountant, Lance Jones, recorded this receipt as an increase in cash and revenues. Is this treatment appropriate? Why or why not?

See notes page for discussion

Transactions (Problem)

P1-1A: Barone's Repair Shop was started on May 1 by Nancy. Prepare a tabular analysis of the following transactions for the month of May.

1. Invested \$10,000 cash to start the repair shop.

Assets			=	Liabilities		Equity	
Cash	+ Accounts Receivable	+ Equipment		Accounts Payable	+	Barone, Capital	
1. +10,000						+10,000	Investment

Transactions (Problem)

2. Purchased equipment for \$5,000 cash.

Assets			Liabilities	Equity	
Cash	Accounts Receivable	Equipment	Accounts Payable	Barone, Capital	
1. +10,000				+10,000	Investment
2. -5,000		+5,000			

Transactions (Problem)

3. Paid \$400 cash for May office rent.

Assets		Liabilities	Equity	
Cash	Accounts Receivable	Accounts Payable	Barone, Capital	
1. +10,000			+10,000	Investment
2. -5,000				
		+5,000		
3. -400			-400	Expense

Transactions (Problem)

4. Received \$5,100 from customers for repair service.

		Assets			Liabilities		Equity		
		Cash	Accounts Receivable	Equipment	=	Accounts Payable	+	Barone, Capital	
1.	+10,000							+10,000	Investment
2.	-5,000			+5,000					
3.	-400							-400	Expense
4.	+5,100							+5,100	Revenue

Transactions (Problem)

5. Withdrew \$1,000 cash for personal use.

		Assets			Liabilities		Equity		
		Cash	Accounts Receivable	Equipment	=	Accounts Payable	+	Barone, Capital	
1.	+10,000							+10,000	Investment
2.	-5,000			+5,000					
3.	-400							-400	Expense
4.	+5,100							+5,100	Revenue
5.	-1,000							-1,000	Drawings

Transactions (Problem)

6. Paid part-time employee salaries of \$2,000.

Assets		Liabilities	Equity	
Cash	Accounts Receivable	Accounts Payable	Barone, Capital	
1. +10,000			+10,000	Investment
2. -5,000		+5,000		
3. -400			-400	Expense
4. +5,100			+5,100	Revenue
5. -1,000			-1,000	Drawings
6. -2,000			-2,000	Expense

Transactions (Problem)

7. Incurred \$250 of advertising costs, on account.

	Assets			=	Liabilities	+	Equity	
	Cash	Accounts Receivable	Equipment		Accounts Payable		Barone, Capital	
1.	+10,000						+10,000	Investment
2.	-5,000		+5,000					
3.	-400						-400	Expense
4.	+5,100						+5,100	Revenue
5.	-1,000						-1,000	Drawings
6.	-2,000						-2,000	Expense
7.					+250		-250	Expense

Transactions (Problem)

8. Provided \$750 of repair services on account.

	Assets			=	Liabilities	+	Equity	
	Cash	Accounts Receivable	Equipment		Accounts Payable		Barone, Capital	
1.	+10,000						+10,000	Investment
2.	-5,000		+5,000					
3.	-400						-400	Expense
4.	+5,100						+5,100	Revenue
5.	-1,000						-1,000	Drawings
6.	-2,000						-2,000	Expense
7.					+250		-250	Expense
8.		+750					+750	Revenue

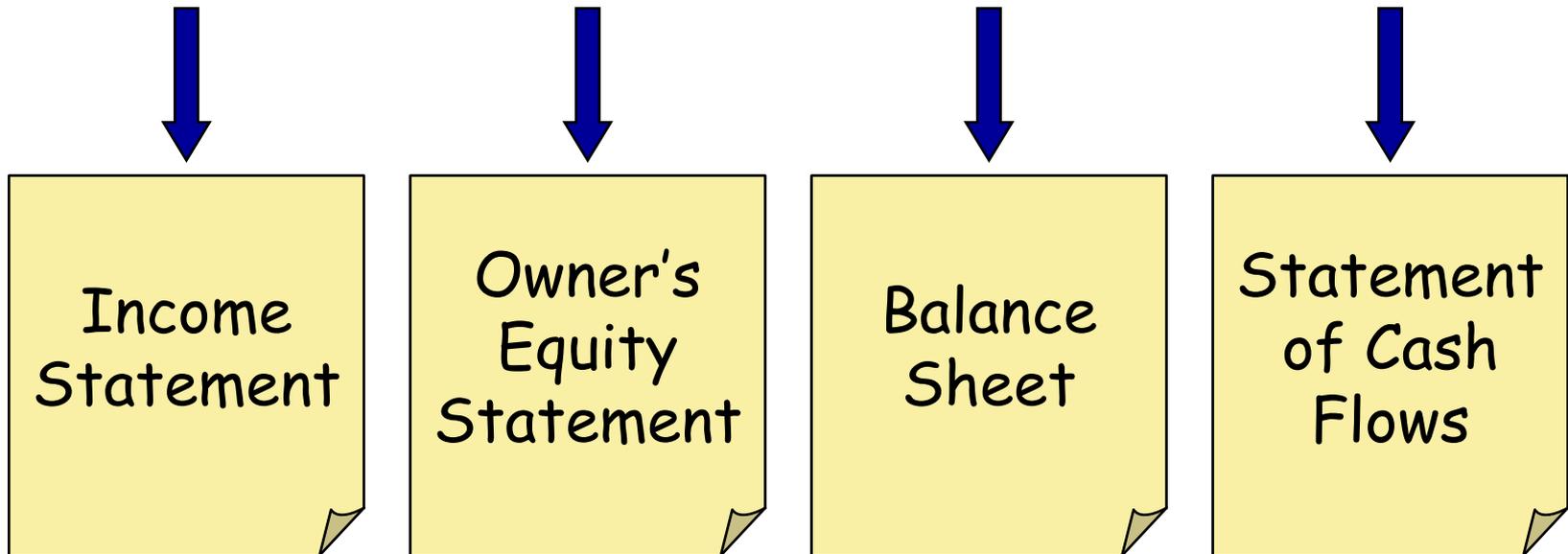
Transactions (Problem)

9. Collected \$120 cash for services previously billed.

	Assets			=	Liabilities	+	Equity	
	Cash	+ Accounts Receivable	+ Equipment		Accounts Payable		Barone, Capital	
1.	+10,000						+10,000	Investment
2.	-5,000		+5,000					
3.	-400						-400	Expense
4.	+5,100						+5,100	Revenue
5.	-1,000						-1,000	Drawings
6.	-2,000						-2,000	Expense
7.					+250		-250	Expense
8.		+750					+750	Revenue
9.	+120	-120						
	6,820	+ 630	+ 5,000	=	250	+	12,200	

Financial Statements

Companies prepare four financial statements from the summarized accounting data:



Financial Statements

Review Question

Net income will result during a time period when:

- a. assets exceed liabilities.
- b. assets exceed revenues.
- c. expenses exceed revenues.
- d. revenues exceed expenses.

Financial Statements

Income Statement

Barone's Repair Shop	
Income Statement	
For the Month Ended May 31, 2008	
Revenues:	
Service revenue	<u>\$ 5,850</u>
Expenses:	
Salary expense	2,000
Rent expense	400
Advertising expense	<u>250</u>
Total expenses	<u>2,650</u>
Net income	<u><u>\$ 3,200</u></u>

- Reports the revenues and expenses for a specific period of time.
- Net income - revenues exceed expenses.
- Net loss - expenses exceed revenues.

Financial Statements

Income Statement

Barone's Repair Shop	
Income Statement	
For the Month Ended May 31, 2008	
Revenues:	
Service revenue	<u>\$ 5,850</u>
Expenses:	
Salary expense	2,000
Rent expense	400
Advertising expense	<u>250</u>
Total expenses	<u>2,650</u>
Net income	<u><u>\$ 3,200</u></u>

Owner's Equity Statement

Barone's Repair Shop	
Owner's Equity Statement	
For the Month Ended May 31, 2008	
Barone's, Capital May 1	\$ -
Add: Investment	10,000
Net income	<u>3,200</u>
	13,200
Less: Drawings	<u>1,000</u>
Barone's, Capital May 31	<u><u>\$12,200</u></u>

Net income is needed to determine the ending balance in owner's equity.

Financial Statements

- Statement indicates the reasons why owner's equity has increased or decreased during the period.

Owner's Equity Statement

Barone's Repair Shop
Owner's Equity Statement
For the Month Ended May 31, 2008

Barone's, Capital May 1	\$ -
Add: Investment	10,000
Net income	3,200
	<hr/>
	13,200
Less: Drawings	1,000
Barone's, Capital May 31	<hr/> <u>\$12,200</u>

Financial Statements

Balance Sheet

Barone's Repair Shop Balance Sheet May 31, 2008	
Assets	
Cash	\$ 6,820
Accounts receivable	630
Equipment	5,000
Total assets	<u>\$12,450</u>
Liabilities	
Accounts payable	\$ 250
Owner's Equity	
Barone's, capital	<u>12,200</u>
Total liab. & equity	<u>\$12,450</u>

Owners' Equity Statement

Barone's Repair Shop Owner's Equity Statement For the Month Ended May 31, 2008	
Barone's, Capital May 1	\$ -
Add: Investment	10,000
Net income	3,200
	<u>13,200</u>
Less: Drawings	1,000
Barone's, Capital May 31	<u>\$ 12,200</u>

The ending balance in owner's equity is needed in preparing the balance sheet

Financial Statements

Balance Sheet

Barone's Repair Shop
Balance Sheet
May 31, 2008

Assets

Cash	\$ 6,820
Accounts receivable	630
Equipment	5,000
Total assets	<u>\$12,450</u>

Liabilities

Accounts payable	\$ 250
------------------	--------

Owner's Equity

Barone's, capital	12,200
Total liab. & equity	<u>\$12,450</u>

- Reports the assets, liabilities, and owner's equity at a specific date.
- Assets listed at the top, followed by liabilities and owner's equity.
- Total assets must equal total liabilities and owner's equity.

Financial Statements

Balance Sheet

Barone's Repair Shop Balance Sheet May 31, 2008

Assets

Cash	\$ 6,820
Accounts receivable	630
Equipment	5,000
Total assets	<u>\$12,450</u>

Liabilities

Accounts payable	\$ 250
------------------	--------

Owner's Equity

Barone's, capital	12,200
Total liab. & equity	<u>\$12,450</u>

Statement of Cash Flows

Barone's Repair Shop

Statement of Cash Flows

For the Month Ended May 31, 2008

Cash flow from operating activities

Cash receipts from revenues	\$ 5,220
Cash paid for expenses	(2,400)
Cash provided by operations	<u>2,820</u>

Cash flow from investing activities

Purchase of equipment	(5,000)
-----------------------	---------

Cash flow from financing activities

Investment by owners	10,000
Drawings by owners	(1,000)
Cash provided by financing	<u>9,000</u>

Net increase in cash	6,820
----------------------	-------

Cash balance, May 1	-
---------------------	---

Cash balance, May 31	<u>\$ 6,820</u>
----------------------	------------------------

Financial Statements

- Information for a specific period of time.
- Answers the following:
 - Where did cash come from?
 - What was cash used for?
 - What was the change in the cash balance?

Statement of Cash Flows

Barone's Repair Shop	
Statement of Cash Flows	
For the Month Ended May 31, 2008	
Cash flow from operating activities	
Cash receipts from customers	\$5,220
Cash paid for expenses	<u>(2,400)</u>
Cash provided by operations	<u>2,820</u>
Cash flow from investing activities	
Purchase of equipment	<u>(5,000)</u>
Cash flow from financing activities	
Investment by owners	10,000
Drawings by owners	<u>(1,000)</u>
Cash provided by financing	<u>9,000</u>
Net increase in cash	6,820
Cash balance, May 1	-
Cash balance, May 31	<u><u>\$6,820</u></u>

Financial Statements

Review Question

Which of the following financial statements is prepared as of a specific date?

- a. Balance sheet.
- b. Income statement.
- c. Owner's equity statement.
- d. Statement of cash flows.

Financial Statements

Discussion Question

Q19. "A company's net income appears directly on the income statement and the owner's equity statement, and it is included indirectly in the company's balance sheet." Do you agree? Explain.

See notes page for discussion

Accounting Career Opportunities

Public Accounting

Careers in auditing and taxation serving the general public.

Private Accounting

Careers in industry working in cost accounting, budgeting, accounting information systems, and taxation.

Opportunities in Government

Careers with the IRS, the FBI, the SEC, and in public colleges and universities.

Forensic Accounting

Careers with insurance companies and law offices to conduct investigations into theft and fraud.

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CHAPTER 2

THE RECORDING PROCESS

Accounting Principles, Eighth Edition

Study Objectives

1. Explain what an account is and how it helps in the recording process.
2. Define debits and credits and explain their use in recording business transactions.
3. Identify the basic steps in the recording process.
4. Explain what a journal is and how it helps in the recording process.
5. Explain what a ledger is and how it helps in the recording process.
6. Explain what posting is and how it helps in the recording process.
7. Prepare a trial balance and explain its purposes.

The Recording Process

The Account

- Debits and credits
- Expansion of basic equation

Steps in the Recording Process

- Journal
- Ledger

The Recording Process Illustrated

- Summary illustration of journalizing and posting

The Trial Balance

- Limitations of a trial balance
- Locating errors
- Use of dollar signs

The Account

Account



- Record of increases and decreases in a specific asset, liability, equity, revenue, or expense item.
- Debit = "Left"
- Credit = "Right"

An Account can be illustrated in a T-Account form.



Account Name	
Debit / Dr.	Credit / Cr.

Debits and Credits

Double-entry accounting system

- Each transaction must affect two or more accounts to keep the basic accounting equation in balance.
- Recording done by debiting at least one account and crediting another.
- **DEBITS must equal CREDITS.**

Debits and Credits

If Debits are **greater than** Credits, the account will have a debit balance.

Account Name		
	Debit / Dr.	Credit / Cr.
Transaction #1	\$10,000	\$3,000
Transaction #3	8,000	
Balance	\$15,000	

Transaction #2

Debits and Credits

If Credits are **greater than** Debits, the account will have a credit balance.

Account Name		
Debit / Dr.	Credit / Cr.	
Transaction #1	\$10,000	Transaction #2
	\$3,000	Transaction #3
	8,000	
Balance		
	\$1,000	

Debits and Credits Summary

Normal
Balance
Debit

Normal
Balance
Credit

Liabilities

Debit / Dr.	Credit / Cr.
	
	Normal Balance

Assets

Debit / Dr.	Credit / Cr.
	
Normal Balance	

Chapter
3-23

Owner's Equity

Debit / Dr.	Credit / Cr.
	
	Normal Balance

Chapter
3-25

Expense

Debit / Dr.	Credit / Cr.
	
Normal Balance	

Chapter
3-27

Revenue

Debit / Dr.	Credit / Cr.
	
	Normal Balance

Chapter
3-26

Debits and Credits Summary

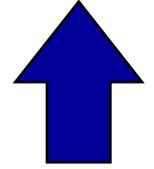
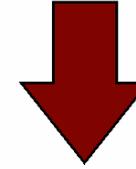
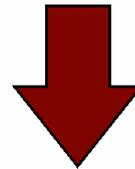
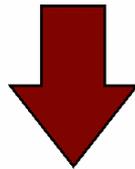
Balance Sheet

Income Statement

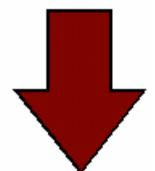
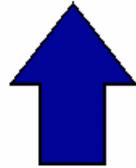
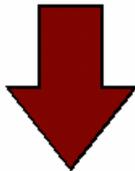
Asset = Liability + Equity

Revenue - Expense

Debit



Credit



Debits and Credits Summary

Review Question

Debits:

- a. increase both assets and liabilities.
- b. decrease both assets and liabilities.
- c.** increase assets and decrease liabilities.
- d. decrease assets and increase liabilities.

Debits and Credits Summary

Discussion Question

Q4. Maria Alvarez, a beginning accounting student, believes debit balances are favorable and credit balances are unfavorable. Is Maria correct? Discuss.

See notes page for discussion

Assets and Liabilities

Assets	
Debit / Dr.	Credit / Cr.
	
Normal Balance	

Chapter 3-23

Liabilities	
Debit / Dr.	Credit / Cr.
	
	Normal Balance

Chapter 3-24

- **Assets** - Debits should exceed credits.
- **Liabilities** - Credits should exceed debits.
- The **normal balance** is on the increase side.

Owners' Equity

Owner's Equity	
Debit / Dr.	Credit / Cr.
	
	Normal Balance

Chapter 3-25

- **Owner's investments** and **revenues** increase owner's equity (credit).
- **Owner's drawings** and **expenses** decrease owner's equity (debit).

Owner's Capital	
Debit / Dr.	Credit / Cr.
	
	Normal Balance

Chapter 3-25

Owner's Drawing	
Debit / Dr.	Credit / Cr.
	
Normal Balance	

Chapter 3-23

Revenue and Expense

Revenue	
Debit / Dr.	Credit / Cr.
	
	Normal Balance

Chapter 3-26

Expense	
Debit / Dr.	Credit / Cr.
	
Normal Balance	

Chapter 3-27

- The purpose of earning **revenues** is to benefit the owner(s).
- The effect of debits and credits on revenue accounts is the **same as** their effect on Owner's Capital.
- **Expenses** have the opposite effect: expenses decrease owner's equity.

Debits and Credits Summary

Review Question

Accounts that normally have debit balances are:

- a. assets, expenses, and revenues.
- b. assets, expenses, and owner's capital.
- c. assets, liabilities, and owner's drawings.
- d. assets, owner's drawings, and expenses.

Expansion of the Basic Equation

Relationship among the assets, liabilities and owner's equity of a business:

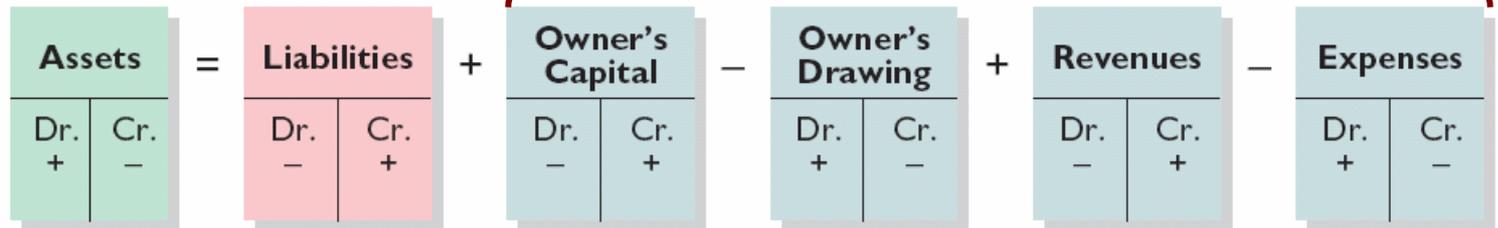
Basic Equation

Assets = Liabilities +

Owner's Equity

Illustration 2-11

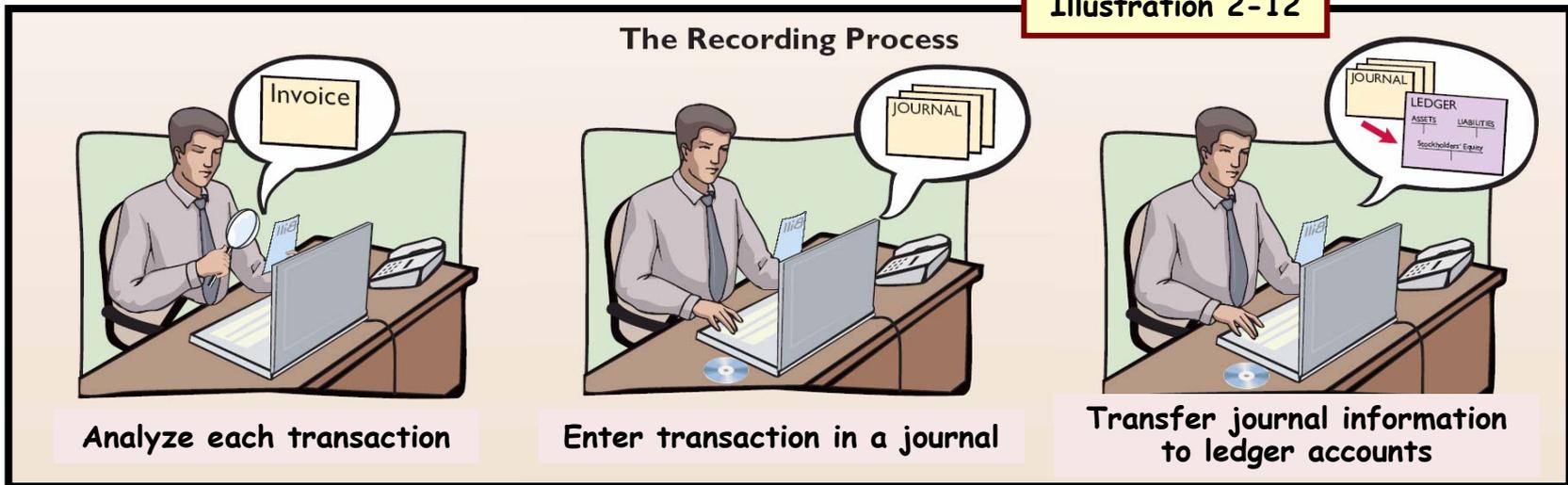
Expanded Basic Equation



The equation must be in balance after every transaction. For every **Debit** there must be a **Credit**.

Steps in the Recording Process

Illustration 2-12



Business documents, such as a sales slip, a check, a bill, or a cash register tape, provide evidence of the transaction.

The Journal

- Book of original entry (General Ledger).
- Transactions recorded in chronological order.
- Contributions to the recording process:
 1. Discloses the complete effects of a transaction.
 2. Provides a chronological record of transactions.
 3. Helps to prevent or locate errors because the debit and credit amounts can be easily compared.

Journalizing

Journalizing - Entering transaction data in the journal.

E2-4 (Facts) Presented below is information related to Hanshew Real Estate Agency.

- Oct. 1** Pete Hanshew begins business as a real estate agent with a cash investment of \$15,000.
- 3** Purchases office furniture for \$1,900, on account.
- 6** Sells a house and lot for B. Kidman; bills B. Kidman \$3,200 for realty services provided.
- 27** Pays \$700 on balance related to transaction of Oct. 3.
- 30** Pays the administrative assistant \$2,500 salary for Oct.

E2-5 Instructions - Journalize the transactions for E2-4.

Journalizing

E2-4 (Facts) Presented below is information related to Hanshew Real Estate Agency.

Oct. 1 Pete Hanshew begins business as a real estate agent with a cash investment of \$15,000.

General Journal				
Date	Account Title	Ref.	Debit	Credit
Oct. 1	Cash		15,000	
	Hanshew, Capital			15,000
	(Owners investment)			

Journalizing

E2-4 (Facts) Presented below is information related to Hanshew Real Estate Agency.

Oct. 3 Purchases office furniture for \$1,900, on account.

General Journal				
Date	Account Title	Ref.	Debit	Credit
Oct. 3	Office Furniture		1,900	
	Accounts Payable			1,900
	(Purchase furniture)			

Journalizing

E2-4 (Facts) Presented below is information related to Hanshew Real Estate Agency.

Oct. 6 Sells a house and lot for B. Kidman; bills B. Kidman \$3,200 for realty services provided.

General Journal				
Date	Account Title	Ref.	Debit	Credit
Oct. 6	Accounts Receivable		3,200	
	Service Revenue			3,200
	(Realty services provided)			

Journalizing

E2-4 (Facts) Presented below is information related to Hanshew Real Estate Agency.

Oct. 27 Pays \$700 on balance related to transaction of Oct. 3.

General Journal				
Date	Account Title	Ref.	Debit	Credit
Oct. 27	Accounts Payable		700	
	Cash			700
	(Payment on account)			

Journalizing

E2-4 (Facts) Presented below is information related to Hanshew Real Estate Agency.

Oct. 30 Pays the administrative assistant \$2,500 salary for Oct.

General Journal				
Date	Account Title	Ref.	Debit	Credit
Oct. 30	Salary Expense		2,500	
	Cash			2,500
	(Payment for salaries)			

Journalizing

Simple Entry - Two accounts, one debit and one credit.

Compound Entry - Three or more accounts.

Example - On June 15, H. Burns, purchased equipment for \$15,000 by paying cash of \$10,000 and the balance on account (to be paid within 30 days).

General Journal				
Date	Account Title	Ref.	Debit	Credit
June 15	Equipment		15,000	
	Cash			10,000
	Accounts Payable			5,000
	(Purchased equipment)			

The Ledger

- A **General Ledger** contains the entire group of accounts maintained by a company.
- The **General Ledger** includes all the asset, liability, owner's equity, revenue and expense accounts.

Chart of Accounts

Accounts and account numbers arranged in sequence in which they are presented in the financial statements.

Hanshew Real Estate Agency			
Chart of Accounts			
Assets		Owner's Equity	
101	Cash	300	Hanshew, Capital
112	Accounts receivable	306	Hanshew, Drawing
126	Advertising supplies	350	Income summary
130	Prepaid insurance		
150	Office equipment		
158	Accumulated depreciation		
Liabilities		Revenues	
200	Accounts payable	400	Service revenue
201	Notes payable		
209	Unearned revenue		
212	Salaries payable		
230	Interest payable		
		Expenses	
		631	Advertising supplies expense
		711	Depreciation expense
		722	Insurance expense
		726	Salaries expense
		729	Rent expense
		905	Interest expense

Standard Form of Account

T-account form used in accounting textbooks.

In practice, the account forms used in ledgers are much more structured.

Cash					No. 101
Date	Explanation	Ref.	Debit	Credit	Balance
Oct. 1			15,000		15,000
27				700	14,300
30				2,500	11,800

Posting

Posting - the process of transferring amounts from the journal to the ledger accounts.

General Journal				J1		
Date	Account Title	Ref.	Debit	Credit		
Oct. 1	Cash	101	15,000			
	Hanshew, Capital			15,000		
	(Owner's investment in business)					

General Ledger				Cash			Acct. No. 101	
Date	Explanation	Ref.	Debit	Credit	Balance			
Oct. 1		J1	15,000		15,000			

Posting

Review Question

Posting:

- a. normally occurs before journalizing.
- b. transfers ledger transaction data to the journal.
- c. is an optional step in the recording process.
- d** transfers journal entries to ledger accounts.

The Recording Process Illustrated

Illustration 2-19

Follow these steps:

1. Determine what type of account is involved.
2. Determine what items increased or decreased and by how much.
3. Translate the increases and decreases into debits and credits.

Transaction	On October 1, C. R. Byrd invests \$10,000 cash in an advertising company called Pioneer Advertising Agency.																		
Basic Analysis	The asset Cash increases \$10,000, and owner's equity C. R. Byrd, Capital increases \$10,000.																		
Equation Analysis	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"><u>Assets</u></td> <td style="text-align: center;">=</td> <td style="text-align: center;"><u>Liabilities</u></td> <td style="text-align: center;">+</td> <td style="text-align: center;"><u>Owner's Equity</u></td> </tr> <tr> <td style="text-align: center;">Cash</td> <td style="text-align: center;">=</td> <td></td> <td></td> <td style="text-align: center;">C.R. Byrd, Capital</td> </tr> <tr> <td style="text-align: center;">+10,000</td> <td></td> <td></td> <td></td> <td style="text-align: center;">+10,000</td> </tr> </table>				<u>Assets</u>	=	<u>Liabilities</u>	+	<u>Owner's Equity</u>	Cash	=			C.R. Byrd, Capital	+10,000				+10,000
<u>Assets</u>	=	<u>Liabilities</u>	+	<u>Owner's Equity</u>															
Cash	=			C.R. Byrd, Capital															
+10,000				+10,000															
Debit – Credit Analysis	Debits increase assets: debit Cash \$10,000. Credits increase owner's equity: credit C. R. Byrd, Capital \$10,000.																		
Journal Entry	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; border-right: 1px solid black;">Oct. 1</td> <td style="width: 60%; border-right: 1px solid black;"> Cash C. R. Byrd, Capital (Owner's investment of cash in business) </td> <td style="width: 10%; border-right: 1px solid black; text-align: center;">101 301</td> <td style="width: 10%; border-right: 1px solid black; text-align: center;">10,000</td> <td style="width: 10%; text-align: center;">10,000</td> </tr> </table>				Oct. 1	Cash C. R. Byrd, Capital (Owner's investment of cash in business)	101 301	10,000	10,000										
Oct. 1	Cash C. R. Byrd, Capital (Owner's investment of cash in business)	101 301	10,000	10,000															
Posting	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px solid black; text-align: center;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Cash</td> <td style="text-align: right;">101</td> </tr> <tr> <td style="border-top: 1px solid black;">Oct. 1 10,000</td> <td></td> </tr> </table> </td> <td style="width: 50%; text-align: center;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">C. R. Byrd, Capital</td> <td style="text-align: right;">301</td> </tr> <tr> <td style="border-top: 1px solid black;">Oct. 1 10,000</td> <td></td> </tr> </table> </td> </tr> </table>				<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Cash</td> <td style="text-align: right;">101</td> </tr> <tr> <td style="border-top: 1px solid black;">Oct. 1 10,000</td> <td></td> </tr> </table>	Cash	101	Oct. 1 10,000		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">C. R. Byrd, Capital</td> <td style="text-align: right;">301</td> </tr> <tr> <td style="border-top: 1px solid black;">Oct. 1 10,000</td> <td></td> </tr> </table>	C. R. Byrd, Capital	301	Oct. 1 10,000						
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Cash</td> <td style="text-align: right;">101</td> </tr> <tr> <td style="border-top: 1px solid black;">Oct. 1 10,000</td> <td></td> </tr> </table>	Cash	101	Oct. 1 10,000		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">C. R. Byrd, Capital</td> <td style="text-align: right;">301</td> </tr> <tr> <td style="border-top: 1px solid black;">Oct. 1 10,000</td> <td></td> </tr> </table>	C. R. Byrd, Capital	301	Oct. 1 10,000											
Cash	101																		
Oct. 1 10,000																			
C. R. Byrd, Capital	301																		
Oct. 1 10,000																			

The Trial Balance

- A list of accounts and their balances at a given time.
- Purpose is to prove that debits equal credits.

Hanshew Real Estate Agency		
Trial Balance		
October 31, 2008		
	Debit	Credit
Cash	\$ 11,800	
Accounts receivable	3,200	
Office furniture	1,900	
Accounts payable		\$ 1,200
Hanshew, Capital		15,000
Service revenue		3,200
Salaries expense	2,500	
	<u>\$ 19,400</u>	<u>\$ 19,400</u>

The Trial Balance

Limitations of a Trial Balance

The trial balance may balance even when

1. a transaction is not journalized,
2. a correct journal entry is not posted,
3. a journal entry is posted twice,
4. incorrect accounts are used in journalizing or posting, or
5. offsetting errors are made in recording the amount of a transaction.

The Trial Balance

Review Question

A trial balance will not balance if:

- a. a correct journal entry is posted twice.
- b. the purchase of supplies on account is debited to Supplies and credited to Cash.
- c.** a \$100 cash drawing by the owner is debited to Owner's Drawing for \$1,000 and credited to Cash for \$100.
- d. a \$450 payment on account is debited to Accounts Payable for \$45 and credited to Cash for \$45.

Recording Process

Discussion Question

Q2-19. Jim Benes is confused about how accounting information flows through the accounting system. He believes the flow of information is as follows.

- a. Debits and credits posted to the ledger.
- b. Business transaction occurs.
- c. Information entered in the journal.
- d. Financial statements are prepared.
- e. Trial balance is prepared.

Is Jim correct? If not, indicate to Jim the proper flow of the information.

See notes page for discussion

LO 7 Prepare a trial balance and explain its purposes.

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 3

ADJUSTING THE ACCOUNTS

Accounting Principles, Eighth Edition

Study Objectives

1. Explain the time period assumption.
2. Explain the accrual basis of accounting.
3. Explain the reasons for adjusting entries.
4. Identify the major types of adjusting entries.
5. Prepare adjusting entries for deferrals.
6. Prepare adjusting entries for accruals.
7. Describe the nature and purpose of an adjusted trial balance.

Adjusting the Accounts

Timing Issues

- Time period assumption
- Fiscal and calendar years
- Accrual- vs. cash-basis accounting
- Recognizing revenues and expenses

The Basics of Adjusting Entries

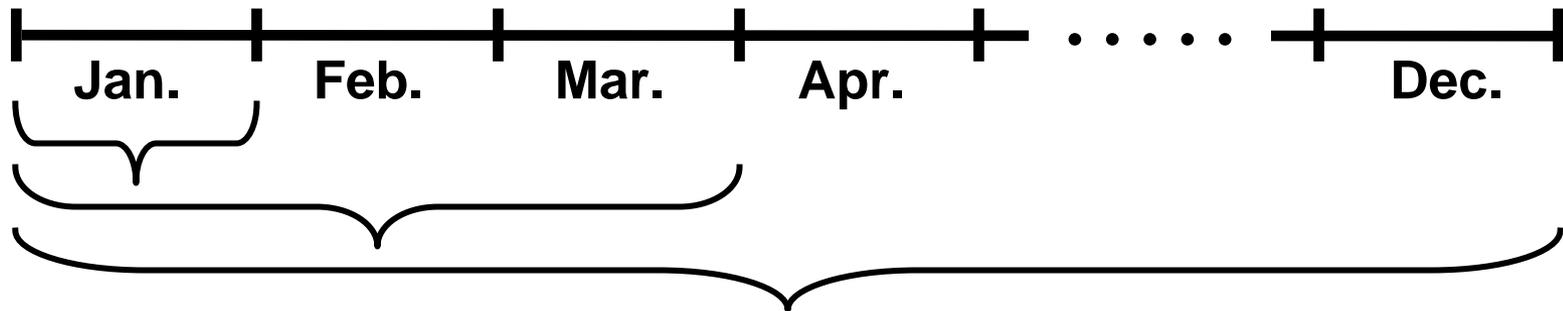
- Types of adjusting entries
- Adjusting entries for deferrals
- Adjusting entries for accruals
- Summary of journalizing and posting

The Adjusted Trial Balance and Financial Statements

- Preparing the adjusted trial balance
- Preparing financial statements

Timing Issues

Accountants divide the economic life of a business into artificial time periods (**Time Period Assumption**).



- Generally a **month**, a **quarter**, or a **year**.
- Fiscal year vs. calendar year
- Also known as the "Periodicity Assumption"

Timing Issues

Review

The time period assumption states that:

- a. revenue should be recognized in the accounting period in which it is earned.
- b. expenses should be matched with revenues.
- c.** the economic life of a business can be divided into artificial time periods.
- d. the fiscal year should correspond with the calendar year.

Timing Issues

Accrual- vs. Cash-Basis Accounting

Accrual-Basis Accounting

- Transactions recorded in the periods in which the events occur
- **Revenues** are recognized when earned, rather than when cash is received.
- **Expenses** are recognized when incurred, rather than when paid.

Timing Issues

Accrual- vs. Cash-Basis Accounting

Cash-Basis Accounting

- **Revenues** are recognized when cash is received.
- **Expenses** are recognized when cash is paid.
- Cash-basis accounting is not in accordance with generally accepted accounting principles (GAAP).

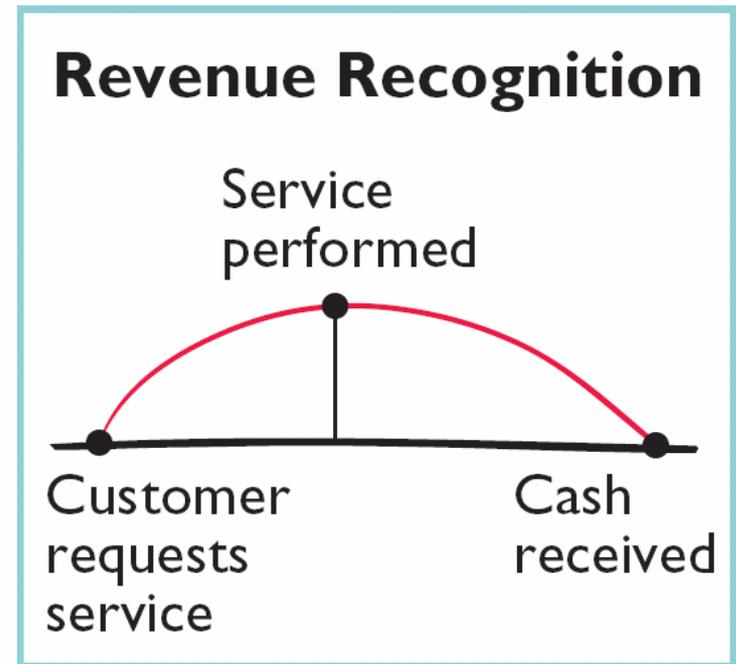
Timing Issues

Recognizing Revenues and Expenses

Revenue Recognition Principle

Companies recognize revenue in the accounting period in which it is earned.

In a service enterprise, revenue is considered to be earned at the time the service is performed.



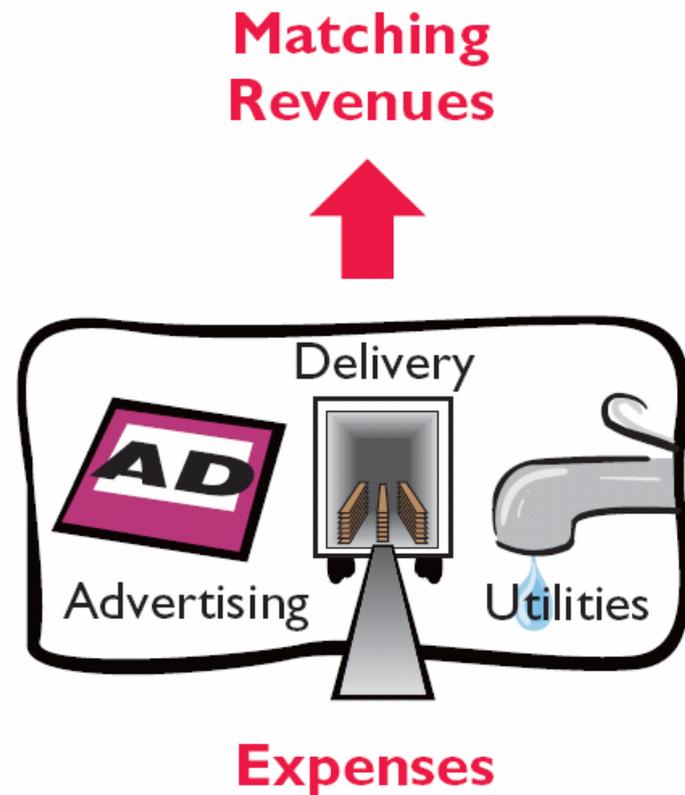
Timing Issues

Recognizing Revenues and Expenses

Matching Principle

Match expenses with revenues in the period when the company makes efforts to generate those revenues.

“Let the expenses follow the revenues.”



Timing Issues

GAAP relationships in revenue and expense recognition

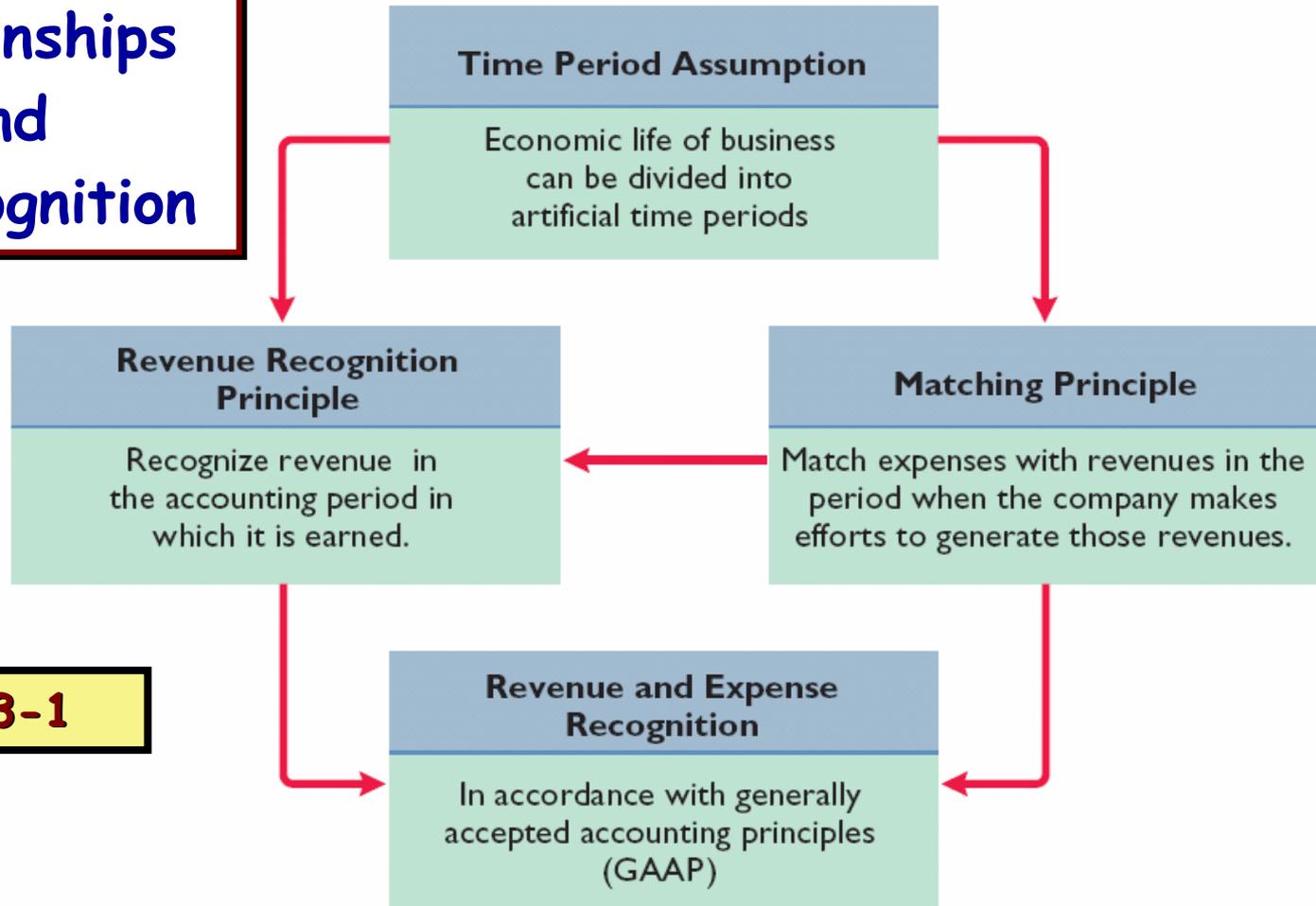


Illustration 3-1

Timing Issues

Review

One of the following statements about the accrual basis of accounting is *false*. That statement is:

- a. Events that change a company's financial statements are recorded in the periods in which the events occur.
- b. Revenue is recognized in the period in which it is earned.
- c. The accrual basis of accounting is in accord with generally accepted accounting principles.
- d.** Revenue is recorded only when cash is received, and expenses are recorded only when cash is paid.

The Basics of Adjusting Entries

- Adjusting entries make it possible to report correct amounts on the **balance sheet** and on the **income statement**.
- A company must make adjusting entries every time it prepares financial statements.

The Basics of Adjusting Entries

- **Revenues** - recorded in the period in which they are earned.
- **Expenses** - recognized in the period in which they are incurred.
- **Adjusting entries** - needed to ensure that the revenue recognition and matching principles are followed.

Timing Issues

Review

Adjusting entries are made to ensure that:

- a. expenses are recognized in the period in which they are incurred.
- b. revenues are recorded in the period in which they are earned.
- c. balance sheet and income statement accounts have correct balances at the end of an accounting period.
- d.** all of the above.

Types of Adjusting Entries

Deferrals

1. **Prepaid Expenses.**
Expenses paid in cash and recorded as assets before they are used or consumed.
2. **Unearned Revenues.**
Revenues received in cash and recorded as liabilities before they are earned.

Accruals

3. **Accrued Revenues.**
Revenues earned but not yet received in cash or recorded.
4. **Accrued Expenses.**
Expenses incurred but not yet paid in cash or recorded.

Trial Balance

Trial Balance - Each account is analyzed to determine whether it is complete and up-to-date.

Phoenix Consulting - Jan. 31st (before adjusting entries)

Acct. No.	Account	Debit	Credit
100	Cash	\$ 50,000	
105	Accounts receivable	35,000	
110	Prepaid insurance	12,000	
120	Equipment	24,000	
130	Investments	300,000	
200	Accounts payable		\$ 20,000
210	Unearned revenue		24,000
220	Note payable		200,000
300	Austin, capital		40,000
400	Sales		137,000
		<u>\$ 421,000</u>	<u>\$ 421,000</u>

Adjusting Entries for Deferrals

Deferrals are either:

- Prepaid expenses

OR

- Unearned revenues.

Adjusting Entries for "Prepaid Expenses"

Payment of cash, that is recorded as an asset because service or benefit will be received in the future.

Cash Payment

BEFORE

Expense Recorded

Prepayments often occur in regard to:

- insurance
- supplies
- advertising
- rent
- maintenance on equipment
- fixed assets (depreciation)

Adjusting Entries for "Prepaid Expenses"

Prepaid Expenses

- Costs that expire either with the passage of time or through use.
- Adjusting entries (1) to record the expenses that apply to the current accounting period, and (2) to show the unexpired costs in the asset accounts.

Adjusting Entries for "Prepaid Expenses"

Illustration 3-4

Adjusting entries for prepaid expenses

Prepaid Expenses



- Increases (debits) an expense account and
- Decreases (credits) an asset account.

Adjusting Entries for "Prepaid Expenses"

Depreciation

- Buildings, equipment, and vehicles (long-lived assets) are recorded as assets, rather than an expense, in the year acquired.
- Companies report a portion of the cost of a long-lived asset as an expense (depreciation) during each period of the asset's useful life (**Matching Principle**).

Adjusting Entries for "Prepaid Expenses"

Example (Depreciation): On Jan. 1st, Phoenix Consulting paid \$24,000 for equipment that has an estimated useful life of 20 years. Show the journal entry to record the purchase of the equipment on Jan. 1st.

Jan. 1	Equipment	24,000	
	Cash		24,000

Equipment		Cash	
Debit	Credit	Debit	Credit
24,000			24,000

Adjusting Entries for "Prepaid Expenses"

Depreciation (Statement Presentation)

- Accumulated Depreciation is a contra asset account.
- Appears just after the account it offsets (Equipment) on the balance sheet.

Balance Sheet	Jan. 31
Assets	
Equipment	24,000
Accumulated Depreciation	<u>(100)</u>
Net Equipment	<u>23,900</u>

Adjusting Entries for "Unearned Revenues"

Receipt of cash that is recorded as a liability because the revenue has not been earned.

Cash Receipt

BEFORE

Revenue Recorded

Unearned revenues often occur in regard to:

- rent
- magazine subscriptions
- airline tickets
- customer deposits
- school tuition

Adjusting Entries for "Unearned Revenues"

Unearned Revenues

- Company makes an adjusting entry to record the revenue that has been earned and to show the liability that remains.
- The adjusting entry for unearned revenues results in a decrease (a debit) to a liability account and an increase (a credit) to a revenue account.

Adjusting Entries for "Unearned Revenues"

Illustration 3-10

Adjusting entries for unearned revenues

Unearned Revenues



- Decrease (a debit) to a liability account and
- Increase (a credit) to a revenue account.

Adjusting Entries for "Unearned Revenues"

Example: On Jan. 1st, Phoenix Consulting received \$24,000 from Arcadia High School for 3 months rent in advance. Show the journal entry to record the receipt on Jan. 1st.

Jan. 1	Cash	24,000	
	Unearned Rent Revenue		24,000

Cash		Unearned Rent Revenue	
Debit	Credit	Debit	Credit
24,000			24,000

Adjusting Entries for "Unearned Revenues"

Example: On Jan. 1st, Phoenix Consulting received \$24,000 from Arcadia High School for 3 months rent in advance. Show the **adjusting journal entry** required on Jan. 31st.

Jan. 31 Unearned Rent Revenue 8,000
 Rent Revenue 8,000

Rent Revenue		Unearned Rent Revenue	
Debit	Credit	Debit	Credit
	8,000	8,000	24,000
			16,000

Adjusting Entries for Accruals

Made to record:

- Revenues earned and

OR

- Expenses incurred

in the current accounting period that have not been recognized through daily entries.

Adjusting Entries for "Accrued Revenues"

Revenues earned but not yet received in cash or recorded.

Adjusting entry results in:

Revenue Recorded

BEFORE

Cash Receipt

Accrued revenues often occur in regard to:

- rent
- interest
- services performed

Adjusting Entries for "Accrued Revenues"

Accrued Revenues

An adjusting entry serves two purposes:

- (1) It shows the receivable that exists, and
- (2) It records the revenues earned.

Adjusting Entries for "Accrued Revenues"

Illustration 3-13

Adjusting entries for accrued revenues

Accrued Revenues



- Increases (debits) an asset account and
- Increases (credits) a revenue account.

Adjusting Entries for "Accrued Revenues"

Example: On Jan. 1st, Phoenix Consulting invested \$300,000 in securities that return 5% interest per year. Show the journal entry to record the investment on Jan. 1st.

Jan. 1	Investments	300,000	
	Cash		300,000

Investments		Cash	
Debit	Credit	Debit	Credit
300,000			300,000

Adjusting Entries for "Accrued Expenses"

Expenses incurred but not yet paid in cash or recorded.

Adjusting entry results in:

Expense Recorded

BEFORE

Cash Payment

Accrued expenses often occur in regard to:

- rent
- interest
- taxes
- salaries

Adjusting Entries for "Accrued Expenses"

Accrued Expenses

An adjusting entry serves two purposes:

- (1) It records the obligations, and
- (2) It recognizes the expenses.

Adjusting Entries for "Accrued Expenses"

Illustration 3-16

Adjusting entries for accrued expenses

Accrued Expenses



- Increases (debits) an expense account and
- Increases (credits) a liability account.

Adjusting Entries for "Accrued Expenses"

Accrued Expenses

An adjusting entry serves two purposes:

- (1) It records the obligations, and
- (2) it recognizes the expenses.

The Adjusted Trial Balance

After all adjusting entries are journalized and posted the company prepares another trial balance from the ledger accounts (**Adjusted Trial Balance**).

Its purpose is to prove the equality of debit balances and credit balances in the ledger.

Timing Issues

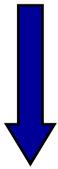
Review

Which of the following statements is *incorrect* concerning the adjusted trial balance?

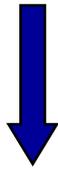
- a. An adjusted trial balance proves the equality of the total debit balances and the total credit balances in the ledger after all adjustments are made.
- b. The adjusted trial balance provides the primary basis for the preparation of financial statements.
- c. The adjusted trial balance lists the account balances segregated by assets and liabilities.
- d. The adjusted trial balance is prepared after the adjusting entries have been journalized and posted.

Preparing Financial Statements

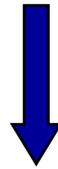
Financial Statements are prepared directly from the Adjusted Trial Balance.



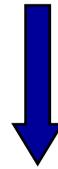
Balance
Sheet



Income
Statement



Owner's
Equity
Statement



Statement
of Cash
Flows

Preparing Financial Statements

Adjusted Trial Balance	Debit	Credit
Cash	\$ 50,000	
Accounts receivable	35,000	
Interest receivable	1,250	
Prepaid insurance	11,000	
Equipment	24,000	
Accumulated depreciation		\$ 100
Investments	300,000	
Accounts payable		20,000
Interest payable		1,500
Unearned revenue		16,000
Note payable		200,000
Austin, capital		40,000
Sales		137,000
Interest revenue		1,250
Rent revenue		8,000
Interest expense	1,500	
Depreciation expense	100	
Insurance expense	1,000	
	<u>\$ 423,850</u>	<u>\$ 423,850</u>

Income Statement

Income Statement

For the Month Ended Jan. 31, 2008

Revenues:

Sales	\$ 137,000
Interest revenue	1,250
Rent revenue	8,000
Total revenue	<u>146,250</u>

Expenses:

Interest expense	1,500
Depreciation expense	100
Insurance expense	1,000
Total expenses	<u>2,600</u>

Net income \$ 143,650

Preparing Financial Statements

Adjusted Trial Balance	Debit	Credit
Cash	\$ 50,000	
Accounts receivable	35,000	
Interest receivable	1,250	
Prepaid insurance	11,000	
Equipment	24,000	
Accumulated depreciation		\$ 100
Investments	300,000	
Accounts payable		20,000
Interest payable		1,500
Unearned revenue		16,000
Note payable		200,000
Austin, capital		40,000
Sales		137,000
Interest revenue		1,250
Rent revenue		8,000
Interest expense	1,500	
Depreciation expense	100	
Insurance expense	1,000	
	<u>\$ 423,850</u>	<u>\$ 423,850</u>

Statement of Owner's Equity

Statement of Owner's Equity For the Month Ended Jan. 31, 2008

Austin, Capital, Jan. 1	\$ 40,000
+ Net income	143,650
- Drawings	0
Austin, Capital, Jan. 31	<u>\$ 183,650</u>

Preparing Financial Statements

Adjusted Trial Balance	Debit	Credit
Cash	\$ 50,000	
Accounts receivable	35,000	
Interest receivable	1,250	
Prepaid insurance	11,000	
Equipment	24,000	
Accumulated depreciation		\$ 100
Investments	300,000	
Accounts payable		20,000
Interest payable		1,500
Unearned revenue		16,000
Note payable		200,000
Austin, capital		40,000
Sales		137,000
Interest revenue		1,250
Rent revenue		8,000
Interest expense	1,500	
Depreciation expense	100	
Insurance expense	1,000	
	<u>\$ 423,850</u>	<u>\$ 423,850</u>

Balance Sheet Jan. 31, 2008

Assets

Cash	\$ 50,000
Accounts receivable	35,000
Interest receivable	1,250
Prepaid insurance	11,000
Equipment	24,000
Accum. Depreciation	(100)
Investments	300,000
Total assets	<u>\$ 421,150</u>

Liabilities & Owner's Equity

Accounts payable	\$ 20,000
Interest payable	1,500
Unearned revenue	16,000
Note payable	200,000
Austin, capital	183,650
Total liab. & equity	<u>\$ 421,150</u>

Alternative Treatment of Prepaid Expenses and Unearned Revenues

- Some companies use an alternative treatment for prepaid expenses and unearned revenues.
- When a company prepays an expense, it debits that amount to **an expense account**.
- When a company receives payment for future services, it credits the amount to **a revenue account**.

LO 8 Prepare adjusting entries for the alternative treatment of deferrals.

Alternative Treatment for "Unearned Revenues"

Example: On Dec. 1st, Phoenix Consulting received \$24,000 from Arcadia High School for 3 months rent in advance. Show the **adjusting journal entry** required on Dec. 31st.

Dec. 31	Rent Revenue	16,000	
	Unearned Rent Revenue		16,000

Unearned Rent Revenue		Rent Revenue	
Debit	Credit	Debit	Credit
	16,000	16,000	24,000
			8,000

Summary of Basic Relationships for Deferrals

Illustration 3A-7

Type of Adjustment	Reason for Adjustment	Account Balances before Adjustment	Adjusting Entry
1. Prepaid expenses	(a) Prepaid expenses initially recorded in asset accounts have been used.	Assets overstated Expenses understated	Dr. Expenses Cr. Assets
	(b) Prepaid expenses initially recorded in expense accounts have not been used.	Assets understated Expenses overstated	Dr. Assets Cr. Expenses
2. Unearned revenues	(a) Unearned revenues initially recorded in liability accounts have been earned.	Liabilities overstated Revenues understated	Dr. Liabilities Cr. Revenues
	(b) Unearned revenues initially recorded in revenue accounts have not been earned.	Liabilities understated Revenues overstated	Dr. Revenues Cr. Liabilities

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 4

COMPLETING THE ACCOUNTING CYCLE

Accounting Principles, Eighth Edition

Study Objectives

1. Prepare a worksheet.
2. Explain the process of closing the books.
3. Describe the content and purpose of a post-closing trial balance.
4. State the required steps in the accounting cycle.
5. Explain the approaches to preparing correcting entries.
6. Identify the sections of a classified balance sheet.

Completing the Accounting Cycle

Using a Worksheet

- Steps in preparation
- Preparing financial statements
- Preparing adjusting entries

Closing the Books

- Preparing closing entries
- Posting closing entries
- Preparing a post-closing trial balance

Summary of Accounting Cycle

- Reversing entries—An optional step
- Correcting entries—An avoidable step

Classified Balance Sheet

- Current assets
- Long-term investments
- Property, plant, and equipment
- Intangible assets
- Current liabilities
- Long-term liabilities
- Owner's equity

Using A Worksheet

Worksheet

- A multiple-column form used in preparing financial statements.
- Not a permanent accounting record.
- Five step process.
- Use of worksheet is optional.

Steps in Preparing a Worksheet

Illustration 4-2

	A	B	C	D	E	F	G	H	I	J	K
1	Worksheet										
2											
3	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet		
4											
5	Account Titles	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

1
Prepare a trial balance on the worksheet

2
Enter adjustment data

3
Enter adjusted balances

4
Extend adjusted balances to appropriate statement columns

5
Total the statement columns, compute net income (or net loss), and complete worksheet

Steps in Preparing a Worksheet

Example

The trial balance for Undercover Roofing for the month ended March 31, 2008, is as follows.

Account Titles	Trial Balance	
	Dr.	Cr.
Cash	\$ 2,500	
Accounts Receivable	1,800	
Roofing Supplies	1,100	
Equipment	6,000	
Accumulated Depreciation		\$ 1,200
Accounts Payable		1,400
Unearned Revenue		300
I. Spy, Capital		7,000
I. Spy, Drawing	600	
Service Revenue		3,000
Salaries Expense	700	
Miscellaneous Expense	200	
Totals	\$ 12,900	\$ 12,900

Other data:

- Supplies on hand total \$140.
- Depreciation for March is \$200.
- Unearned revenue amounted to \$130 on March 31.
- Accrued salaries are \$350.

Instructions

- Prepare and complete the worksheet.

Steps in Preparing a Worksheet

1. Prepare a Trial Balance on the Worksheet

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	2,500									
Accounts Receivable	1,800									
Roofing Supplies	1,100									
Equipment	6,000									
Accumulated Depreciation		1,200								
Accounts Payable		1,400								
Unearned Revenue		300								
I. Spy, Capital		7,000								
I. Spy, Drawing	600									
Service Revenue		3,000								
Salaries Expense	700									
Miscellaneous Expense	200									
Totals	12,900	12,900								

Include all accounts with balances.

Trial balance amounts come directly from ledger accounts.

Steps in Preparing a Worksheet

2. Enter the Adjustments in the Adjustments Columns

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	2,500									
Accounts Receivable	1,800									
Roofing Supplies	1,100			(a) 960						
Equipment	6,000									
Accumulated Depreciation		1,200		(b) 200						
Accounts Payable		1,400								
Unearned Revenue		300	(c) 170							
I. Spy, Capital		7,000								
I. Spy, Drawing	600									
Service Revenue		3,000		(c) 170						
Salaries Expense	700		(d) 350							
Miscellaneous Expense	200									
Totals	12,900	12,900								
Supplies Expense			(a) 960							
Depreciation Expense			(b) 200							
Salaries Payable				(d) 350						
Totals			1,680	1,680						

Adjustments Key:

- (a) Supplies used.
- (b) Depreciation expense.
- (c) Service revenue earned.
- (d) Salaries accrued.

Add additional accounts as needed.

Enter adjustment amounts, total adjustments columns, and check for equality.

Steps in Preparing a Worksheet

3. Complete the Adjusted Trial Balance Columns

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	2,500				2,500					
Accounts Receivable	1,800				1,800					
Roofing Supplies	1,100		(a)	960	140					
Equipment	6,000				6,000					
Accumulated Depreciation		1,200	(b)	200		1,400				
Accounts Payable		1,400				1,400				
Unearned Revenue		300	(c)	170		130				
I. Spy, Capital		7,000				7,000				
I. Spy, Drawing	600				600					
Service Revenue		3,000	(c)	170		3,170				
Salaries Expense	700		(d)	350	1,050					
Miscellaneous Expense	200				200					
Totals	12,900	12,900								
Supplies Expense			(a)	960	960					
Depreciation Expense			(b)	200	200					
Salaries Payable			(d)	350		350				
Totals			1,680	1,680	13,450	13,450				

Total the adjusted trial balance columns and check for equality.

Steps in Preparing a Worksheet

4. Extend Amounts to Financial Statement Columns

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	2,500				2,500					
Accounts Receivable	1,800				1,800					
Roofing Supplies	1,100		(a)	960	140					
Equipment	6,000				6,000					
Accumulated Depreciation		1,200	(b)	200		1,400				
Accounts Payable		1,400				1,400				
Unearned Revenue		300	(c)	170		130				
I. Spy, Capital		7,000				7,000				
I. Spy, Drawing	600				600					
Service Revenue		3,000	(c)	170		3,170				3,170
Salaries Expense	700		(d)	350	1,050		1,050			
Miscellaneous Expense	200				200		200			
Totals	12,900	12,900								
Supplies Expense			(a)	960	960		960			
Depreciation Expense			(b)	200	200		200			
Salaries Payable			(d)	350		350				
Totals			1,680	1,680	13,450	13,450	2,410	3,170		

Extend all revenue and expense account balances to the income statement columns.

Steps in Preparing a Worksheet

4. Extend Amounts to Financial Statement Columns

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	2,500				2,500				2,500	
Accounts Receivable	1,800				1,800				1,800	
Roofing Supplies	1,100			(a) 960	140				140	
Equipment	6,000				6,000				6,000	
Accumulated Depreciation		1,200		(b) 200		1,400				1,400
Accounts Payable		1,400				1,400				1,400
Unearned Revenue		300	(c) 170			130				130
I. Spy, Capital		7,000				7,000				7,000
I. Spy, Drawing	600				600				600	
Service Revenue		3,000		(c) 170		3,170		3,170		
Salaries Expense	700		(d) 350		1,050		1,050			
Miscellaneous Expense	200				200		200			
Totals	12,900	12,900								
Supplies Expense			(a) 960		960		960			
Depreciation Expense			(b) 200		200		200			
Salaries Payable				(d) 350		350				350
Totals			1,680	1,680	13,450	13,450	2,410	3,170	11,040	10,280

Extend all asset, liability, and equity account balances to the balance sheet columns.

Steps in Preparing a Worksheet

5. Total Columns, Compute Net Income (Loss)

Account Titles	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	2,500				2,500				2,500	
Accounts Receivable	1,800				1,800				1,800	
Roofing Supplies	1,100		(a)	960	140				140	
Equipment	6,000				6,000				6,000	
Accumulated Depreciation		1,200	(b)	200		1,400				1,400
Accounts Payable		1,400				1,400				1,400
Unearned Revenue		300	(c)	170		130				130
I. Spy, Capital		7,000				7,000				7,000
I. Spy, Drawing	600				600				600	
Service Revenue		3,000	(c)	170		3,170		3,170		
Salaries Expense	700		(d)	350	1,050		1,050			
Miscellaneous Expense	200				200		200			
Totals	12,900	12,900								
Supplies Expense			(a)	960	960		960			
Depreciation Expense			(b)	200	200		200			
Salaries Payable			(d)	350		350				350
Totals			1,680	1,680	13,450	13,450	2,410	3,170	11,040	10,280
Net Income							760			760
Totals							3,170	3,170	11,040	11,040

Compute Net Income or Net Loss.

Steps in Preparing a Worksheet

Review Question

Net income is shown on a work sheet in the:

- a. income statement debit column only.
- b. balance sheet debit column only.
- c. income statement credit column and balance sheet debit column.
- d** income statement debit column and balance sheet credit column.

Preparing Financial Statements from a Worksheet

Worksheet

- Income statement is prepared from the income statement columns.
- Balance sheet and owner's equity statement are prepared from the balance sheet columns.

Companies journalize and post adjusting entries.

Preparing Financial Statements from a Worksheet

- b. Prepare an income statement for the month ended March 31, 2008.

Undercover Roofing		
Income Statement		
For the Month Ended March 31, 2008		
Revenues		\$ 3,170
Service revenues		
Expenses		
Salaries expense	\$ 1,050	
Supplies expense	960	
Depreciation expense	200	
Miscellaneous expense	200	
Total expenses		<u>2,410</u>
Net income		<u><u>\$ 760</u></u>

Preparing Financial Statements from a Worksheet

- b. Prepare an owner's equity statement for the month ended March 31, 2008.

Undercover Roofing
Statement of Owner's Equity
For the Month Ended March 31, 2008

I. Spy, Capital, March 1	\$ 7,000
Add: Net income	760
Less: Drawings	(600)
I. Spy, Capital, March 31	<u>\$ 7,160</u>

Preparing Financial Statements from a Worksheet

b. Prepare a balance sheet as of March 31, 2008.

**Undercover
Roofing
Balance Sheet
March 31, 2008**

Assets		
Current assets		
Cash		\$ 2,500
Accounts receivable		1,800
Roofing supplies		140
Total current assets		<u>4,440</u>
Property, plant, and equipment		
Equipment	6,000	
Less: Accumulated depreciation	<u>1,400</u>	<u>4,600</u>
Total assets		<u><u>\$ 9,040</u></u>
Liabilities and Owner's Equity		
Current liabilities		
Accounts payable		\$ 1,400
Salaries payable		350
Unearned revenue		130
Total current liabilities		<u>1,880</u>
Owner's equity		
I. Spy, Capital		<u>7,160</u>
Total liabilities and owner's equity		<u><u>\$ 9,040</u></u>

Preparing Adjusting Entries from a Worksheet

Adjusting Entries

- The adjusting entries are prepared from the adjustments columns of the worksheet.
- Journalizing and posting of adjusting entries follows the preparation of financial statements when a worksheet is used.

Preparing Financial Statements from a Worksheet

- c. Journalize the adjusting entries from the adjustments columns of the worksheet.

Date	Account Title	Ref.	Debit	Credit
Mar. 31	Supplies expense		960	
	Roofing supplies			960
	Depreciation expense		200	
	Accumulated depreciation			200
	Unearned revenue		170	
	Service revenue			170
	Salaries expense		350	
	Salaries payable			350

Preparing Financial Statements from a Worksheet

Discussion Question

Q4-2. Explain the purpose of the worksheet.

See notes page for discussion

Closing the Books

At the end of the accounting period, the company makes the accounts ready for the next period.

Illustration 4-5

TEMPORARY

These accounts are closed

All revenue accounts

All expense accounts

Owner's drawing account

PERMANENT

These accounts are not closed

All asset accounts

All liability accounts

Owner's capital account

Closing the Books

Closing entries formally recognize, in the general ledger, the transfer of

- net income (or net loss) and
 - owner's drawing
- to owner's capital.

Closing entries are only at the end of the annual accounting period.

Closing the Books

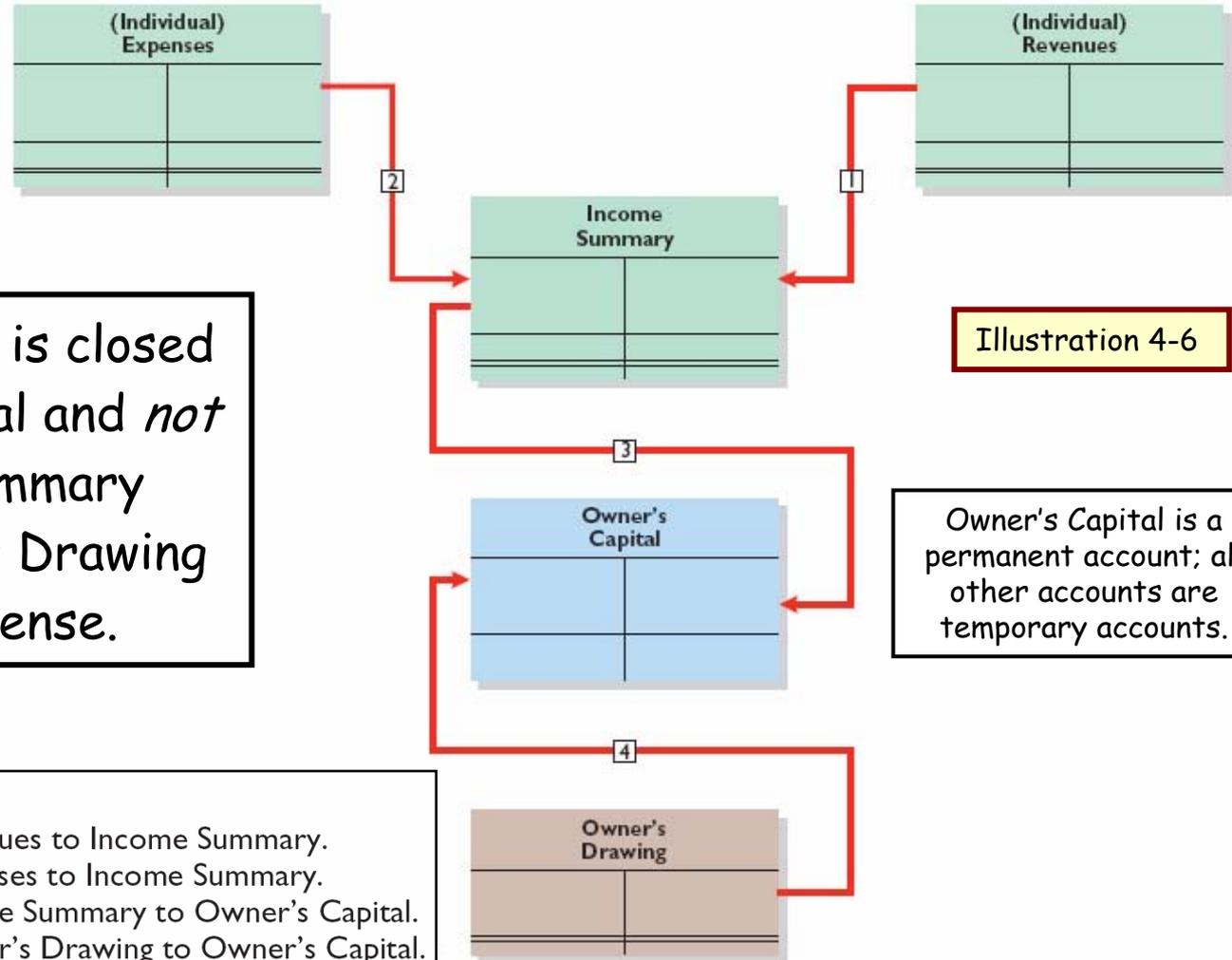


Illustration 4-6

Owner's Capital is a permanent account; all other accounts are temporary accounts.

Note:

Owner's Drawing is closed directly to Capital and *not* to Income Summary because Owner's Drawing is not an expense.

- Key:
- 1 Close Revenues to Income Summary.
 - 2 Close Expenses to Income Summary.
 - 3 Close Income Summary to Owner's Capital.
 - 4 Close Owner's Drawing to Owner's Capital.

Closing the Books

d. Journalize the closing entries from the financial statement columns of the worksheet.

Service revenue	3,170	
Income summary		3,170
Income summary	2,410	
Salary expense		1,050
Supplies expense		960
Depreciation expense		200
Miscellaneous expense		200
Income summary	760	
I. Spy, Capital		760
I. Spy, Capital	600	
I. Spy, Drawing		600

Closing
Entries
need
to be
Posted

Preparing a Post-Closing Trial Balance

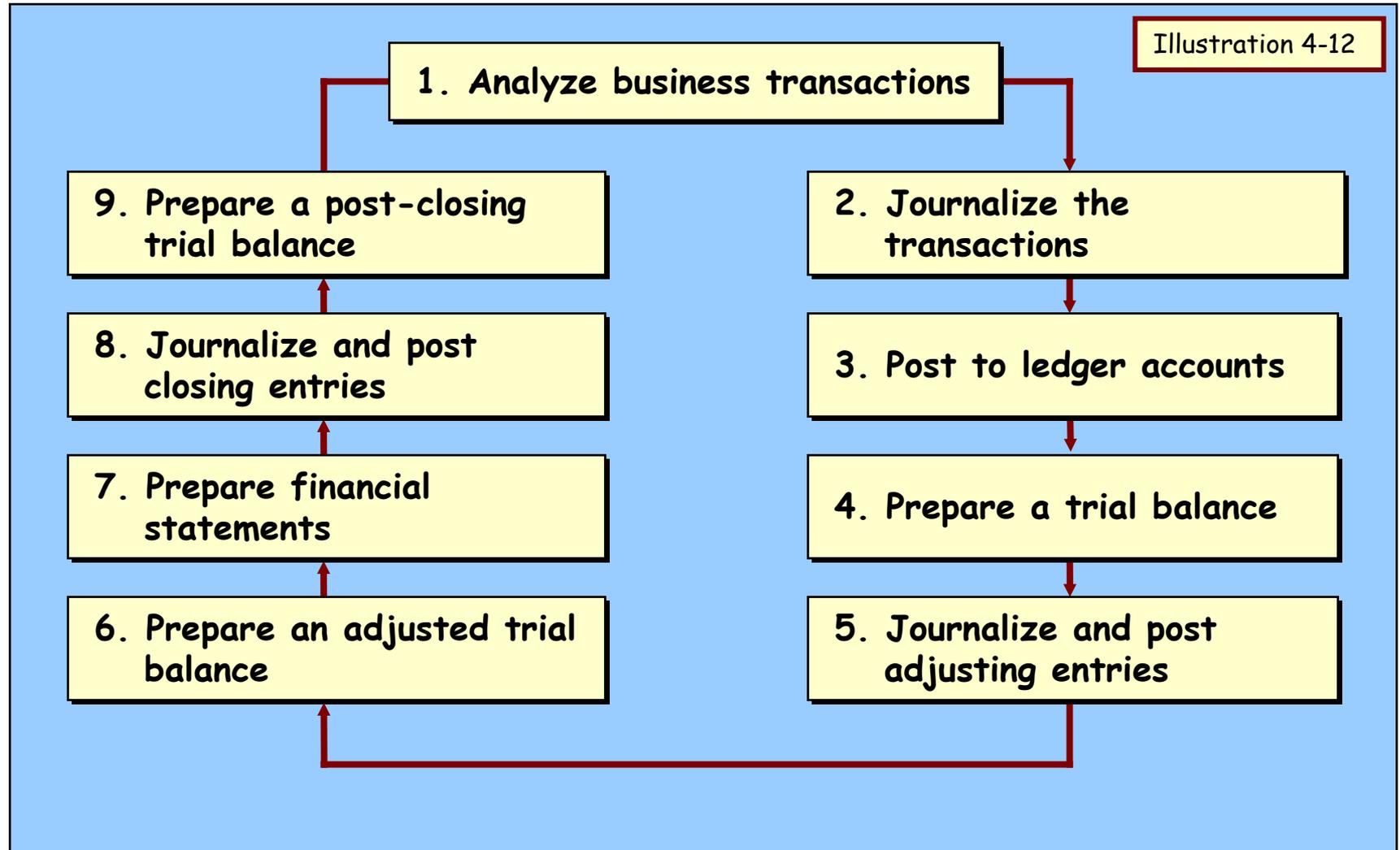
Purpose is to prove the equality of the permanent account balances after journalizing and posting of closing entries.

All temporary accounts will have zero balances.

Account Titles	Post-Closing Trial Balance	
	Dr.	Cr.
Cash	\$ 2,500	
Accounts Receivable	1,800	
Roofing Supplies	140	
Equipment	6,000	
Accumulated Depreciation		\$ 1,400
Accounts Payable		1,400
Salaries payable		350
Unearned Revenue		130
I. Spy, Capital		7,160
Totals	<u>\$ 10,440</u>	<u>\$ 10,440</u>

Summary of the Accounting Cycle

Illustration 4-12



Correcting Entries—An Avoidable Step

Correcting entries

- are unnecessary if the records are error-free.
- are made whenever an error is discovered.
- must be posted before closing entries.

Instead of preparing a correcting entry, it is possible to reverse the incorrect entry and then prepare the correct entry.

Correcting Entries—An Avoidable Step

BE4-9 At Batavia Company, the following errors were discovered after the transactions had been journalized and posted. Prepare the correcting entries.

1. A collection on account from a customer was recorded as a debit to Cash and a credit to Service Revenue for \$780.

Incorrect entry	Cash	780	
	Service revenue		780
Correct entry	Cash	780	
	Accounts receivable		780
Correcting entry	Service revenue	780	
	Accounts receivable		780

Correcting Entries—An Avoidable Step

BE4-9 At Batavia Company, the following errors were discovered after the transactions had been journalized and posted. Prepare the correcting entries.

2. The purchase of supplies on account for \$1,570 was recorded as a debit to Store Supplies and a credit to Accounts Payable for \$1,750.

Incorrect entry	Store Supplies	1,750	
	Accounts payable		1,750
Correct entry	Store Supplies	1,570	
	Accounts payable		1,570
Correcting entry	Accounts payable	180	
	Store Supplies		180

The Classified Balance Sheet

- Presents a snapshot at a point in time.
- To improve understanding, companies group similar assets and similar liabilities together.

Standard Classifications

Illustration 4-17

<u>Assets</u>	<u>Liabilities and Owner's Equity</u>
Current assets	Current liabilities
Long-term investments	Long-term liabilities
Property, plant, and equipment	Owner's equity
Intangible assets	

The Classified Balance Sheet

Current Assets

- Assets that a company expects to convert to cash or use up **within one year** or the **operating cycle**, whichever is longer.
- **Operating cycle** is the average time it takes from the purchase of inventory to the collection of cash from customers.

The Classified Balance Sheet

Current Assets

Illustration 4-19

The Coca-Cola Company

THE COCA-COLA COMPANY

Balance Sheet (partial)
(in millions)

Current assets

Cash and cash equivalents	\$ 6,707
Short-term investments	61
Trade accounts receivable	2,171
Inventories	1,420
Prepaid expenses and other assets	1,735
Total current assets	<u>\$12,094</u>

Companies usually list current asset accounts in the order they expect to convert them into cash.

The Classified Balance Sheet

Review Question

Cash, and other resources that are reasonably expected to be realized in cash or sold or consumed in the business within one year or the operating cycle, are called:

- a. Current assets.
- b. Intangible assets.
- c. Long-term investments.
- d. Property, plant, and equipment.

The Classified Balance Sheet

Long-Term Investments

- Investments in stocks and bonds of other companies.
- Investments in long-term assets such as land or buildings that a company is not currently using in its operating activities.

Illustration 4-20



YAHOO! INC.
Balance Sheet (partial)
(in thousands)

Long-term investments

Long-term marketable debt securities

\$1,042,575

The Classified Balance Sheet

Property, Plant, and Equipment

- Long useful lives.
- Currently used in operations.
- **Depreciation** - allocating the cost of assets to a number of years.
- **Accumulated depreciation** - total amount of depreciation expensed thus far in the asset's life.

The Classified Balance Sheet

Property, Plant, and Equipment

Illustration 4-21



K2, INC. Balance Sheet (partial) (in thousands)

Property, plant, and equipment

Land and land improvements	\$ 6,794	
Buildings and leasehold improvements	55,900	
Machinery and equipment	204,651	
Construction in process	<u>5,614</u>	\$272,959
Less: Accumulated depreciation		<u>131,995</u>
		\$140,964

The Classified Balance Sheet

Intangible Assets

- Assets that do not have physical substance.

Illustration 4-22



TIME WARNER, INC.

Balance Sheet (partial)
(in millions)

Intangible assets

Film library	\$ 3,361
Customer lists	868
Cable television franchises	29,751
Sports franchises	262
Brands, trademarks, and other intangible assets	9,643
	<hr/>
	\$43,885

The Classified Balance Sheet

Review Question

Patents and copyrights are

- a. Current assets.
- b. Intangible assets.**
- c. Long-term investments.
- d. Property, plant, and equipment.

The Classified Balance Sheet

Current Liabilities

- Obligations the company is to pay within the coming year.
- Usually list notes payable first, followed by accounts payable. Other items follow in order of magnitude.
- **Liquidity** - ability to pay obligations expected to be due within the next year.

The Classified Balance Sheet

Current Liabilities

Illustration 4-23



MARCUS CORPORATION

Balance Sheet (partial)
(in thousands)

Current liabilities

Notes payable	\$ 2,066
Accounts payable	17,516
Current maturities of long-term debt	26,321
Taxes payable	14,889
Other current liabilities	14,809
Accrued compensation payable	8,614
Total current liabilities	<u>\$84,215</u>

The Classified Balance Sheet

Long-Term Liabilities

- Obligations a company expects to pay **after** one year.

Illustration 4-24



NORTHWEST AIRLINES CORPORATION

Balance Sheet (partial)
(in millions)

Long-term liabilities

Long-term debt	\$ 7,715
Other liabilities	4,346
Long-term obligations under capital leases	308
Total long-term liabilities	<u>\$12,369</u>

The Classified Balance Sheet

Review Question

Which of the following is not a long-term liability?

- a. Bonds payable
- b. Current maturities of long-term obligations
- c. Long-term notes payable
- d. Mortgages payable

The Classified Balance Sheet

Owner's Equity

- Proprietorship - one capital account.
- Partnership - capital account for each partner.
- Corporation - Capital Stock and Retained Earnings.

Illustration 4-25



NORDSTROM, INC.

Balance Sheet (partial)
(\$ in thousands)

Stockholders' equity

Common stock, 271,331 shares	\$ 685,934
Retained earnings	1,406,747
Total stockholders' equity	<u>\$2,092,681</u>

Recording Process

Discussion Question

Q4-18. (a) What is the term used to describe the owner's equity section of a corporation? (b) Identify the two owner's equity accounts in a corporation and indicate the purpose of each.

See notes page for discussion

Reversing Entries

- It is often helpful to reverse some of the adjusting entries before recording the regular transactions of the next period.
- Companies make **a reversing entry at the beginning of the next accounting period.**
- Each reversing entry is the exact opposite of the adjusting entry made in the previous period.
- The use of reversing entries does not change the amounts reported in the financial statements.

Reversing Entries Example

Illustration 4A-1

Without Reversing Entries (per chapter)				With Reversing Entries (per appendix)			
<u>Initial Salary Entry</u>				<u>Initial Salary Entry</u>			
Oct. 26	Salaries Expense	4,000	4,000	Oct. 26	(Same entry)		
	Cash						
<u>Adjusting Entry</u>				<u>Adjusting Entry</u>			
Oct. 31	Salaries Expense	1,200		Oct. 31	(Same entry)		
	Salaries Payable		1,200				
<u>Closing Entry</u>				<u>Closing Entry</u>			
Oct. 31	Income Summary	5,200		Oct. 31	(Same entry)		
	Salaries Expense		5,200				
<u>Reversing Entry</u>				<u>Reversing Entry</u>			
Nov. 1	No reversing entry is made.			Nov. 1	Salaries Payable	1,200	
					Salaries Expense		1,200
<u>Subsequent Salary Entry</u>				<u>Subsequent Salary Entry</u>			
Nov. 9	Salaries Payable	1,200		Nov. 9	Salaries Expense	4,000	
	Salaries Expense	2,800			Cash		4,000
	Cash		4,000				

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 5

ACCOUNTING FOR MERCHANDISING OPERATIONS

Accounting Principles, Eighth Edition

Study Objectives

1. Identify the differences between service and merchandising companies.
2. Explain the recording of purchases under a perpetual inventory system.
3. Explain the recording of sales revenues under a perpetual inventory system.
4. Explain the steps in the accounting cycle for a merchandising company.
5. Distinguish between a multiple-step and a single-step income statement.
6. Explain the computation and importance of gross profit.
7. Determine cost of goods sold under a periodic system.

Accounting for Merchandising Operations

Merchandising Operations

- Operating cycles
- Inventory systems—perpetual and periodic

Recording Purchases of Merchandise

- Freight costs
- Purchase returns and allowances
- Purchase discounts
- Summary of purchasing transactions

Recording Sales of Merchandise

- Sales returns and allowances
- Sales discounts

Completing the Accounting Cycle

- Adjusting entries
- Closing entries
- Summary of merchandising entries

Forms of Financial Statements

- Multiple-step income statement
- Single-step income statement
- Classified balance sheet
- Determining cost of goods sold under a periodic system

Merchandising Operations

Merchandising Companies

Buy and Sell Goods



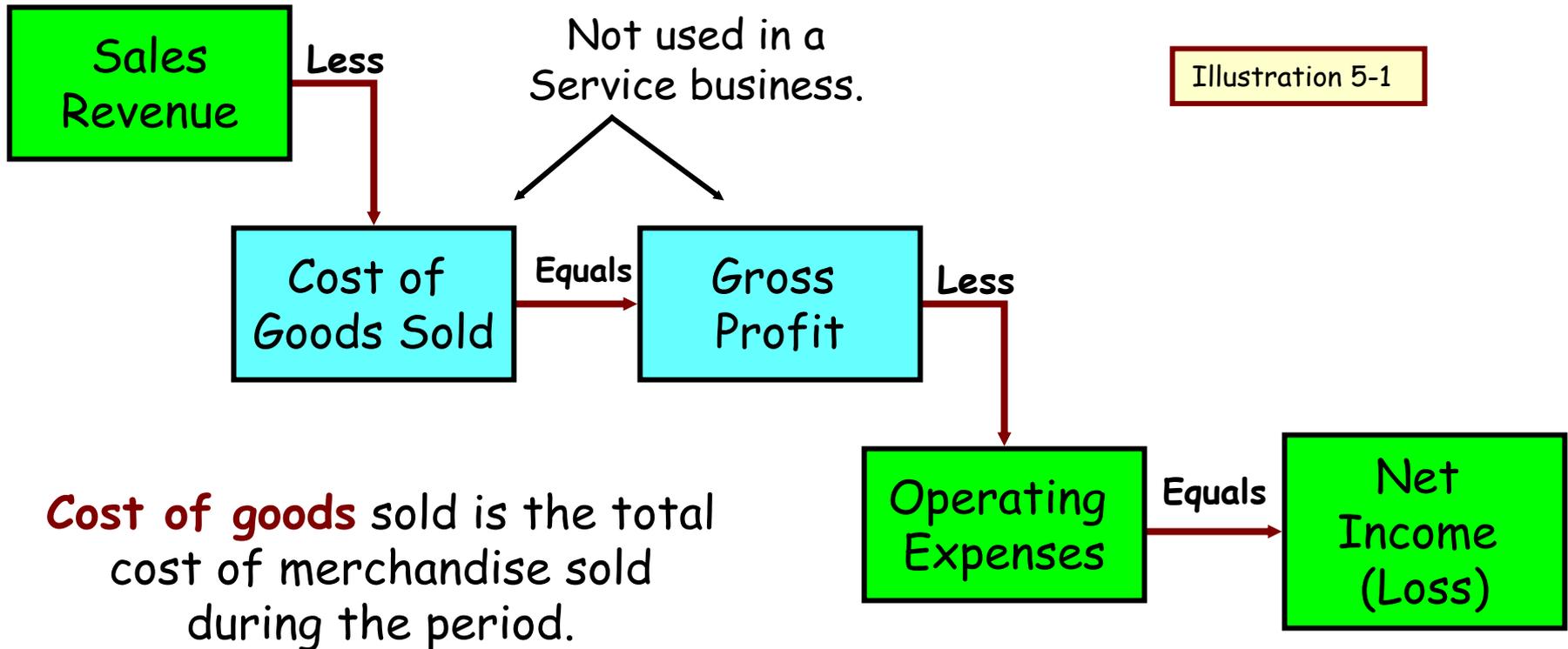
WAL★MART®



The primary source of revenues is referred to as **sales revenue** or **sales**.

Merchandising Operations

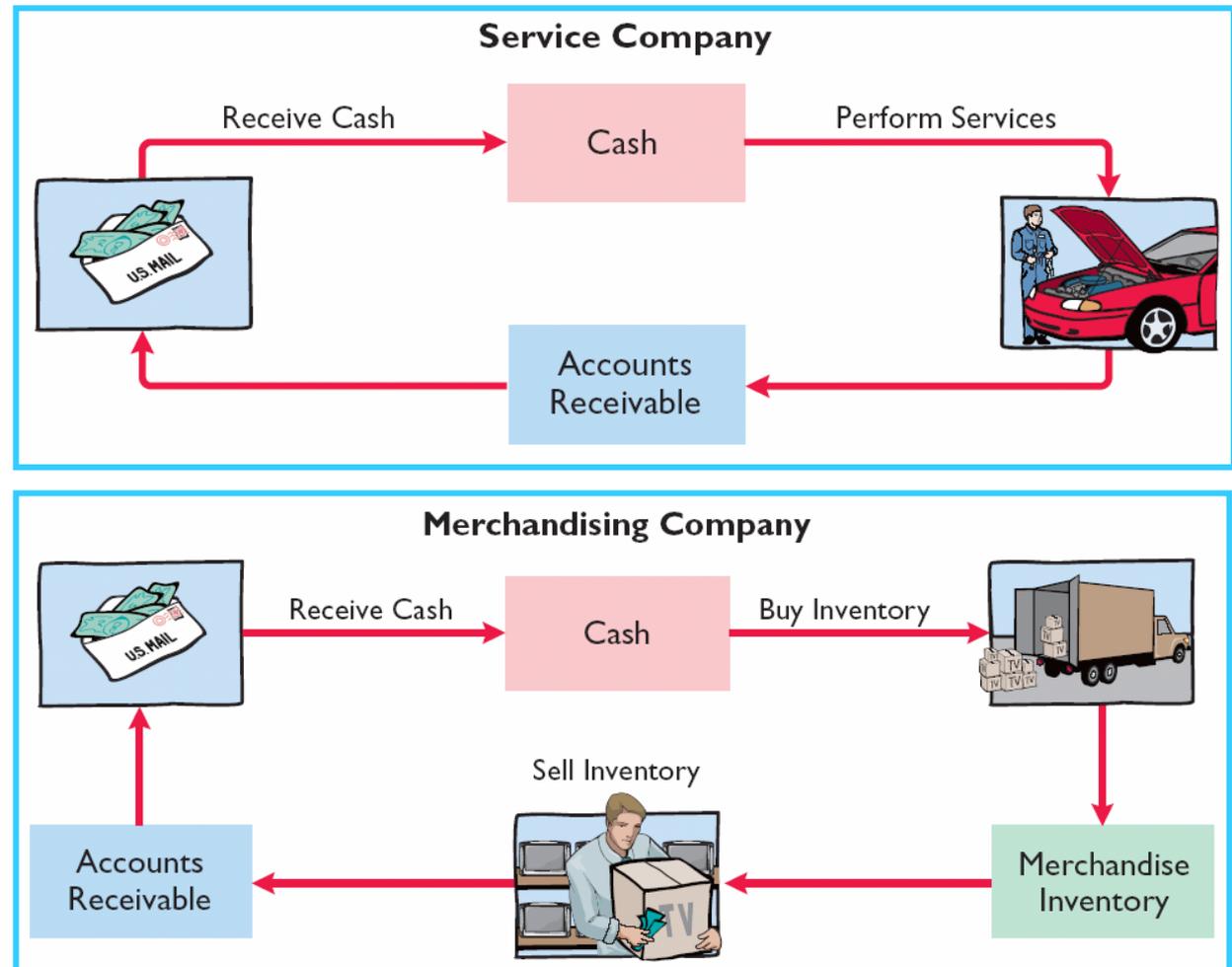
Income Measurement



Operating Cycles

Illustration 5-2

The operating cycle of a **merchandising company** ordinarily is longer than that of a **service company**.



Inventory Systems

Perpetual System

Features:

1. Purchases increase Merchandise Inventory.
2. Freight costs, Purchase Returns and Allowances and Purchase Discounts are included in Merchandise Inventory.
3. Cost of Goods Sold is increased and Merchandise Inventory is decreased for each sale.
4. Physical count done to verify Merchandise Inventory balance.

The perpetual inventory system provides a continuous record of Merchandise Inventory and Cost of Goods Sold.

Inventory Systems

Periodic System

Features:

1. Purchases of merchandise increase Purchases.
2. Ending Inventory determined by physical count.
3. Calculation of Cost of Goods Sold:

Beginning inventory	\$ 100,000
Add: Purchases, net	<u>800,000</u>
Goods available for sale	900,000
Less: Ending inventory	<u>125,000</u>
Cost of goods sold	<u><u>\$ 775,000</u></u>

Recording Purchases of Merchandise

- Made using cash or credit (on account).
- Normally recorded when goods are received.
- **Purchase invoice** should support each credit purchase.

Illustration 5-4

Date 5/4/08		Salesperson Malone	Terms 2/10, n/30	Freight Paid by Buyer		
Catalog No.	Description	Quantity	Price	Amount		
X572Y9820	Printed Circuit Board-prototype	1	2,300	\$2,300		
A2547Z45	Production Model Circuits	5	300	1,500		
IMPORTANT: ALL RETURNS MUST BE MADE WITHIN 10 DAYS				TOTAL	\$3,800	

INVOICE NO. 731

PW Audio Supply, Inc.
27 Circle Drive
Harding, Michigan 48281

S
O
L
D
T
O

Firm Name Sauk Stereo
Attention of James Hoover, Purchasing Agent
Address 125 Main Street
Chelsea Illinois 60915
City State Zip

Recording Purchases of Merchandise

E5-2 Information related to Steffens Co. is presented below. Prepare the journal entry to record the transaction under a perpetual inventory system.

1. On April 5, purchased merchandise from Bryant Company for \$25,000 terms 2/10, net/30, FOB shipping point.

April 5	Merchandise inventory	25,000	
	Accounts payable		25,000

Recording Purchases of Merchandise

E5-2 Continued Prepare the journal entry to record the transaction under a perpetual inventory system.

2. On April 6, paid freight costs of \$900 on merchandise purchased from Bryant.

April 6	Merchandise inventory	900	
	Cash		900

Recording Purchases of Merchandise

Not all purchases increase Merchandise Inventory.

E5-2 Continued Prepare the journal entry to record the transaction under a perpetual inventory system.

3. On April 7, purchased equipment on account for \$26,000.

April 7	Equipment	26,000	
	Accounts payable		26,000

Recording Purchases of Merchandise

Freight Costs

Terms

- **FOB shipping point** - seller places goods Free On Board the carrier, and buyer pays freight costs.
- **FOB destination** - seller places the goods Free On Board to the buyer's place of business, and seller pays freight costs.

Freight costs incurred by the seller on outgoing merchandise are an operating expense to the seller (Freight-out or Delivery Expense).

Recording Purchases of Merchandise

Purchase Returns and Allowances

Purchaser may be dissatisfied because goods are damaged or defective, of inferior quality, or do not meet specifications.

Purchase Return

Return goods for credit if the sale was made on credit, or for a cash refund if the purchase was for cash.

Purchase Allowance

May choose to keep the merchandise if the seller will grant an allowance (deduction) from the purchase price.

Recording Purchases of Merchandise

Review Question

In a perpetual inventory system, a return of defective merchandise by a purchaser is recorded by crediting:

- a. Purchases
- b. Purchase Returns
- c. Purchase Allowance
- d. Merchandise Inventory

Recording Purchases of Merchandise

E5-2 Continued Prepare the journal entry to record the transaction under a perpetual inventory system.

4. On April 8, returned damaged merchandise to Bryant Company and was granted a \$4,000 credit for returned merchandise.

April 8	Accounts payable	4,000	
	Merchandise inventory		4,000

Recording Purchases of Merchandise

Purchase Discounts

Credit terms may permit buyer to claim a cash discount for prompt payment.

Advantages:

- Purchaser saves money.
- Seller shortens the operating cycle.

Example: Credit terms of 2/10, n/30, is read "two-ten, net thirty." 2% cash discount if payment is made within 10 days.

Recording Purchases of Merchandise

Purchase Discounts Terms

2/10, n/30

2% discount if paid within 10 days, otherwise net amount due within 30 days.

1/10 EOM

1% discount if paid within first 10 days of next month.

n/10 EOM

Net amount due within the first 10 days of the next month.

Recording Purchases of Merchandise

E5-2 Continued Prepare the journal entry to record the transaction under a perpetual inventory system.

5. On April 15, paid the amount due to Bryant Company in full. Remember the return of \$4,000 of merchandise.

(Discount = \$21,000 × 2% = \$420)

April 15	Accounts payable	21,000	
	Cash		20,580
	Merchandise Inventory		420

Recording Purchases of Merchandise

E5-2 Continued Prepare the journal entry to record the transaction under a perpetual inventory system.

5. On April 15, paid the amount due to Bryant Company in full.

What entry would be made if the company failed to pay within 10 days?

April 16	Accounts payable	21,000	
or later	Cash		21,000

Recording Purchases of Merchandise

Purchase Discounts

Should discounts be taken when offered?

Discount of 2% on \$21,000	\$ 420.00
\$21,000 invested at 10% for 20 days	<u>115.07</u>
Savings by taking the discount	<u>\$304.93</u>

Passing up the discount offered equates to paying an interest rate of 2% on the use of \$21,000 for 20 days.

Example: 2% for 20 days = Annual rate of 36.5%
($365/20 = 18.25$ twenty-day periods $\times 2\% = 36.5\%$)

Recording Purchases of Merchandise

Summary of Purchasing Transactions

E5-2

Merchandise Inventory

	Debit	Credit	
5 th - Purchase	\$25,000	\$4,000	8 th - Return
6 th - Freight-in	900	420	15 th - Discount
Balance	\$21,480		

Recording Sales of Merchandise

- Made for cash or credit (on account).
- Normally recorded when earned, usually when goods transfer from seller to buyer.
- **Sales invoice** should support each credit sale.

Illustration 5-4

Date	Salesperson	Terms	Freight Paid by Buyer		
5/4/08	Malone	2/10, n/30			
Catalog No.	Description	Quantity	Price	Amount	
X572Y9820	Printed Circuit Board-prototype	1	2,300	\$2,300	
A2547Z45	Production Model Circuits	5	300	1,500	
IMPORTANT: ALL RETURNS MUST BE MADE WITHIN 10 DAYS				TOTAL	\$3,800

Recording Sales of Merchandise

Two Journal Entries to Record a Sale

#1	Cash or Accounts receivable	XXX	} Selling Price
	Sales	XXX	
#2	Cost of goods sold	XXX	} Cost
	Merchandise inventory	XXX	

Recording Sales of Merchandise

E5-5 Presented are transactions related to Wheeler Company.

1. On December 3, Wheeler Company sold \$500,000 of merchandise to Hashmi Co., terms 2/10, n/30, FOB shipping point. The cost of the merchandise sold was \$350,000.
2. On December 8, Hashmi Co. was granted an allowance of \$27,000 for merchandise purchased on December 3.
3. On December 13, Wheeler Company received the balance due from Hashmi Co.

Instructions: Prepare the journal entries to record these transactions on the books of Wheeler Company using a perpetual inventory system.

Recording Sales of Merchandise

E5-5 Prepare the journal entries for Wheeler Company .

1. On December 3, Wheeler Company sold \$500,000 of merchandise to Hashmi Co., terms 2/10, n/30, FOB shipping point. Cost of merchandise sold was \$350,000.

Dec. 3	Accounts receivable	500,000	
	Sales		500,000
	Cost of goods sold	350,000	
	Merchandise inventory		350,000

Recording Sales of Merchandise

Sales Returns and Allowances

- “Flipside” of purchase returns and allowances.
- Contra-revenue account (debit).
- Sales not reduced (debited) because:
 - would obscure importance of sales returns and allowances as a percentage of sales.
 - could distort comparisons between total sales in different accounting periods.

Recording Sales of Merchandise

E5-5 Continued Prepare the journal entries for Wheeler Company.

2. On December 8, Hashmi Co. was granted an **allowance** of \$27,000 for merchandise purchased on December 3.

Dec. 8	Sales returns and allowances	27,000	
	Accounts receivable		27,000

Recording Sales of Merchandise

E5-5 Continued Prepare the journal entries for Wheeler Company.

2. **Variation** On Dec. 8, Hashmi Co. **returned** merchandise for credit of \$27,000. The original cost of the merchandise to Wheeler was \$19,800.

Dec. 8	Sales returns and allowances	27,000	
	Accounts receivable		27,000
	Merchandise inventory	19,800	
	Cost of goods sold		19,800

Recording Sales of Merchandise

Review Question

The cost of goods sold is determined and recorded each time a sale occurs in:

- a. periodic inventory system only.
- b. a perpetual inventory system only.
- c. both a periodic and perpetual inventory system.
- d. neither a periodic nor perpetual inventory system.

Recording Sales of Merchandise

Sales Discount

- Offered to customers to promote prompt payment.
- “Flipside” of purchase discount.
- Contra-revenue account (debit).

Recording Sales of Merchandise

E5-5 Continued Prepare the journal entries for Wheeler Company.

3. On December 13, Wheeler Company received the balance due from Hashmi Co.

Dec. 13	Cash	463,540 *
	Sales discounts	9,460 **
	Accounts receivable	473,000 ***

* $(\$473,000 - \$9,460)$

** $[(\$500,000 - \$27,000) \times 2\%]$

*** $(\$500,000 - \$27,000)$

Recording Sales of Merchandise

E5-5 Continued Prepare the sales revenue section of the income statement for Wheeler Company.

Wheeler Company	
Income Statement (Partial)	
For the Month Ended Dec. 31,	
<hr/>	
Sales revenue	
Sales	\$ 500,000
Less: Sales returns and allowances	(27,000)
Sales discounts	(9,460)
	<hr/>
Net sales	463,540
	<hr/>

Recording Sales of Merchandise

Discussion Question

Q5-9 Joan Roland believes revenues from credit sales may be earned before they are collected in cash. Do you agree? Explain.

See notes page for discussion

Completing the Accounting Cycle

Adjusting Entries

- Generally the same as a service company.
- One additional adjustment to make the records agree with the actual inventory on hand.
- Involves adjusting Merchandise Inventory and Cost of Goods Sold.

Completing the Accounting Cycle

Closing Entries

- Close all accounts that affect net income.

E5-8 Presented is information related to Rogers Co. for the month of January 2008.

Ending inventory per books	\$ 21,600	Rent expense	\$ 20,000
Ending inventory per count	21,000	Salary expense	61,000
Cost of goods sold	218,000	Sales discount	10,000
Freight-out	7,000	Sales returns	13,000
Insurance expense	12,000	Sales	350,000

Required: (a) Prepare the necessary adjusting entry for inventory.
(b) Prepare the necessary closing entries.

Completing the Accounting Cycle

E5-8 (a) Prepare the necessary adjusting entry for inventory.

Cost of goods sold	600	
Merchandise inventory		600

Ending inventory per books	\$ 21,600
Ending inventory per count	21,000
Overstatement of inventory	<u>\$ 600</u>

Completing the Accounting Cycle

E5-8 (b) Prepare the necessary closing entries.

Sales	350,000	
Income summary		350,000
Income summary	341,600	
Cost of goods sold		218,600
Freight-out		7,000
Insurance expense		12,000
Rent expense		20,000
Salary expense		61,000
Sales discounts		10,000
Sales returns		13,000
Income summary	8,400	
Rogers, Capital		8,400

Forms of Financial Statements

Multiple-Step Income Statement

- Shows several steps in determining net income.
- Two steps relate to principal operating activities.
- Distinguishes between **operating** and **non-operating** activities.

Forms of Financial Statements

PW AUDIO SUPPLY, INC.			
Income Statement			
For the Year Ended December 31, 2008			
Sales revenues			
Sales			\$480,000
Less: Sales returns and allowances	\$12,000		
Sales discounts	8,000		20,000
			<hr/>
Net sales		→	460,000
Cost of goods sold			
			<hr/>
			316,000
			<hr/>
		→	144,000
Gross profit			
Operating expenses			
Selling expenses			
Store salaries expense	45,000		
Advertising expense	16,000		
Depreciation expense—store equipment	8,000		
Freight-out	7,000		
			<hr/>
Total selling expenses	76,000		
Administrative expenses			
Salaries expense	19,000		
Utilities expense	17,000		
Insurance expense	2,000		
			<hr/>
Total administrative expenses	38,000		
			<hr/>
Total operating expenses		→	114,000
			<hr/>
Income from operations			
			30,000

Key Items:

- Net sales
- Gross profit
- Gross profit rate
- Operating expenses



Forms of Financial Statements

Key Items:

- Net sales
- Gross profit
- Gross profit rate
- Operating expenses
- Nonoperating activities
- Net income

PW AUDIO SUPPLY, INC.			
Income Statement			
For the Year Ended December 31, 2008			
Sales revenues			
Sales			\$480,000
Less: Sales returns and allowances	\$12,000		
Sales discounts	8,000	<u>20,000</u>	
Net sales			460,000
Cost of goods sold			<u>316,000</u>
Gross profit			144,000

Income from operations			30,000
Other revenues and gains			
Interest revenue	3,000		
Gain on sale of equipment	600	<u>3,600</u>	
Other expenses and losses			
Interest expense	1,800		
Casualty loss from vandalism	200	<u>2,000</u>	
			<u>1,600</u>
Net income		→	<u><u>\$ 31,600</u></u>

Forms of Financial Statements

Review Question

The multiple-step income statement for a merchandiser shows each of the following features except:

- a. gross profit.
- b. cost of goods sold.
- c. a sales revenue section.
- d. investing activities section.**

Forms of Financial Statements

Single-Step Income Statement

- Subtract total expenses from total revenues
- Two reasons for using the single-step format:
 - 1) Company does not realize any type of profit until total revenues exceed total expenses.
 - 2) Format is simpler and easier to read.

Forms of Financial Statements

Illustration 5-12

Single- Step

PW AUDIO SUPPLY		
Income Statement		
For the Year Ended December 31, 2008		
Revenues		
Net sales		\$460,000
Interest revenue		3,000
Gain on sale of equipment		<u>600</u>
Total revenues		463,600
Expenses		
Cost of goods sold	\$316,000	
Selling expenses	76,000	
Administrative expenses	38,000	
Interest expense	1,800	
Casualty loss from vandalism	<u>200</u>	
Total expenses		<u>432,000</u>
Net income		<u><u>\$ 31,600</u></u>

Forms of Financial Statements

Classified Balance Sheet

Illustration 5-13

PW AUDIO SUPPLY		
Balance Sheet (Partial)		
December 31, 2008		
<u>Assets</u>		
Current assets		
Cash		\$ 9,500
Accounts receivable		16,100
Merchandise inventory		40,000
Prepaid insurance		1,800
Total current assets		<u>67,400</u>
Property, plant, and equipment		
Store equipment	\$80,000	
Less: Accumulated depreciation—store equipment	<u>24,000</u>	<u>56,000</u>
Total assets		<u><u>\$123,400</u></u>

Calculation of Gross Profit

PW AUDIO SUPPLY, INC.			
Income Statement			
For the Year Ended December 31, 2008			
Sales revenues			
Sales			\$480,000
Less: Sales returns and allowances	\$12,000		
Sales discounts	8,000	→	<u>20,000</u>
Net sales			460,000
Cost of goods sold		→	<u>316,000</u>
Gross profit			144,000

Key Items:

- Net sales
- Gross profit
- Gross profit rate



Gross Profit	÷	Net Sales	=	Gross Profit Rate
\$144,000	÷	\$460,000	=	31.3%

Illustration 5-8

Determining Cost of Goods Sold Under a Periodic System

Periodic System

- **Separate accounts** used to record purchases, freight costs, returns, and discounts.
- Company does not maintain a running account of changes in inventory.
- Ending inventory determined by physical count.

Determining Cost of Goods Sold Under a Periodic System

Calculation of Cost of Goods Sold

Illustration 5-14

Cost of goods sold			
Inventory, January 1			\$36,000
Purchases		\$325,000	
Less: Purchase returns and allowances	\$10,400		
Purchase discounts	<u>6,800</u>	<u>17,200</u>	
Net purchases		307,800	
Add: Freight-in		<u>12,200</u>	
Cost of goods purchased			<u>320,000</u>
Cost of goods available for sale			356,000
Inventory, December 31			<u>40,000</u>
Cost of goods sold			\$316,000

Recording Purchases of Merchandise under a Periodic System

***E5-17** Information related to Chevalier Co. is presented below. Prepare the journal entry to record the transaction under a periodic inventory system.

1. On April 5, purchased merchandise from Paris Company for \$22,000 terms 2/10, net/30, FOB shipping point.

April 5	Purchases	22,000	
	Accounts payable		22,000

Recording Purchases of Merchandise under a Periodic System

***E5-17 Continued** Prepare the journal entry to record the transaction under a periodic inventory system.

2. On April 6, paid freight costs of \$600 on merchandise purchased from Paris.

April 6	Freight-in (Transportation-in)	600	
	Cash		600

Recording Purchases of Merchandise under a Periodic System

***E5-17 Continued** Prepare the journal entry to record the transaction under a periodic inventory system.

4. On April 8, returned damaged merchandise to Paris Company and was granted a \$4,000 allowance.

April 8	Accounts payable	4,000	
	Purchase returns and allowances		4,000

Recording Purchases of Merchandise under a Periodic System

***E5-17 Continued** Prepare the journal entry to record the transaction under a periodic inventory system.

5. On April 15, paid the amount due to Paris Company in full. Remember the return of \$4,000 of merchandise.

(Discount = \$18,000 × 2% = \$360)

April 15	Accounts payable	18,000	
	Cash		17,640
	Purchase Discounts		360

Recording Sales of Merchandise under a Periodic System

E5-5 Prepare the journal entry for Wheeler Company to record a sale of merchandise under a periodic system.

1. On December 3, Wheeler Company sold \$500,000 of merchandise to Hashmi Co., terms 2/10, n/30, FOB shipping point. Cost of merchandise sold was \$350,000.

Dec. 3	Accounts receivable	500,000	
	Sales		500,000

No entry is recorded for cost of goods sold at the time of the sale under a periodic system.

Worksheet for a Merchandising Company

PW AUDIO SUPPLY Worksheet For the Year Ended December 31, 2008										
Accounts	Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	9,500				9,500				9,500	
Accounts Receivable	16,100				16,100				16,100	
Merchandise Inventory	40,500			(a) 500	40,000				40,000	
Prepaid Insurance	3,800			(b) 2,000	1,800				1,800	
Store Equipment	80,000				80,000				80,000	
Accumulated Depreciation		16,000		(c) 8,000		24,000				24,000
Accounts Payable		20,400				20,400				20,400
R. A. Lamb, Capital		83,000				83,000				83,000
R. A. Lamb, Drawing	15,000				15,000				15,000	
Sales		480,000				480,000	480,000			
Sales Returns and Allowances	12,000				12,000		12,000			
Sales Discounts	8,000				8,000		8,000			
Cost of Goods Sold	315,500		(a) 500		316,000		316,000			
Freight-out	7,000				7,000		7,000			
Advertising Expense	16,000				16,000		16,000			
Admin. Sal. Exp.	19,000				19,000		19,000			
Store Salaries Expense	40,000		(d) 5,000		45,000		45,000			
Utilities Expense	17,000				17,000		17,000			
Totals	599,400	599,400								
Insurance Expense			(b) 2,000		2,000		2,000			
Depreciation Expense			(c) 8,000		8,000		8,000			
Salaries Payable				(d) 5,000		5,000				5,000
Totals			15,500	15,500	612,400	612,400	450,000	480,000	162,400	132,400
Net Income							30,000			30,000
Totals							480,000	480,000	162,400	162,400

Key: (a) Adjustment to inventory on hand, (b) Insurance expired, (c) Depreciation expense, (d) Salaries accrued.

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 6

INVENTORIES

Accounting Principles, Eighth Edition

Study Objectives

1. Describe the steps in determining inventory quantities.
2. Explain the accounting for inventories and apply the inventory cost flow methods.
3. Explain the financial effects of the inventory cost flow assumptions.
4. Explain the lower-of-cost-or-market basis of accounting for inventories.
5. Indicate the effects of inventory errors on the financial statements.
6. Compute and interpret the inventory turnover ratio.

Reporting and Analyzing Inventory

Classifying Inventory

- Finished goods
- Work in process
- Raw materials

Determining Inventory Quantities

- Taking a physical inventory
- Determining ownership of goods

Inventory Costing

- Specific identification
- Cost flow assumptions
- Financial statement and tax effects
- Consistent use
- Lower-of-cost-or-market

Inventory Errors

- Income statement effects
- Balance sheet effects

Statement Presentation and Analysis

- Presentation
- Analysis

Classifying Inventory

Merchandising Company

One Classification:

- Merchandise Inventory

Manufacturing Company

Three Classifications:

- Raw Materials
- Work in Process
- Finished Goods

Regardless of the classification, companies report all inventories under Current Assets on the balance sheet.

Determining Inventory Quantities

Physical Inventory taken for two reasons:

Perpetual System

1. Check accuracy of inventory records.
2. Determine amount of inventory lost (wasted raw materials, shoplifting, or employee theft).

Periodic System

1. Determine the inventory on hand
2. Determine the cost of goods sold for the period.

Determining Inventory Quantities

Taking a Physical Inventory

Involves counting, weighing, or measuring each kind of inventory on hand.

Taken,

- when the business is closed or when business is slow.
- at end of the accounting period.

Determining Inventory Quantities

Determining Ownership of Goods

Goods in Transit

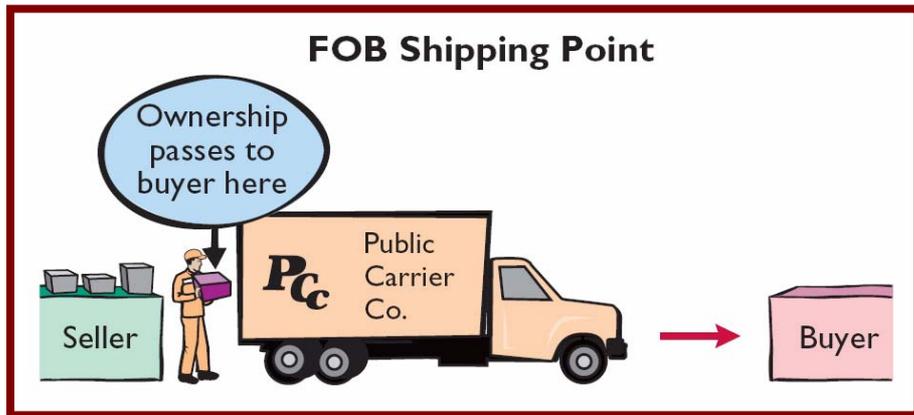
- Purchased goods not yet received.
- Sold goods not yet delivered.

Goods in transit should be included in the inventory of the company that has **legal title** to the goods. Legal title is determined by the **terms of sale**.

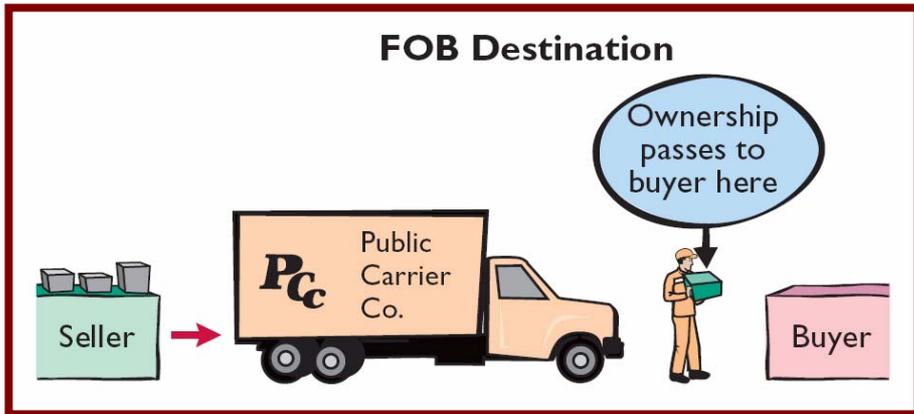
Determining Inventory Quantities

Illustration 6-1

Terms of Sale



Ownership of the goods passes to the buyer when the public carrier accepts the goods from the seller.



Ownership of the goods remains with the seller until the goods reach the buyer.

Determining Inventory Quantities

Review Question

Goods in transit should be included in the inventory of the buyer when the:

- a. public carrier accepts the goods from the seller.
- b. goods reach the buyer.
- c. terms of sale are FOB destination.
- d.** terms of sale are FOB shipping point.

Determining Inventory Quantities

Determining Ownership of Goods

Consigned Goods

- In some lines of business, it is common to hold the goods of other parties and try to sell the goods for them for a fee, but without taking ownership of goods.
- These are called **consigned goods**.

Inventory Costing

Unit costs can be applied to quantities on hand using the following costing methods:

- Specific Identification
- First-in, first-out (FIFO)
- Last-in, first-out (LIFO)
- Average-cost

Cost Flow Assumptions

Inventory Costing

Example

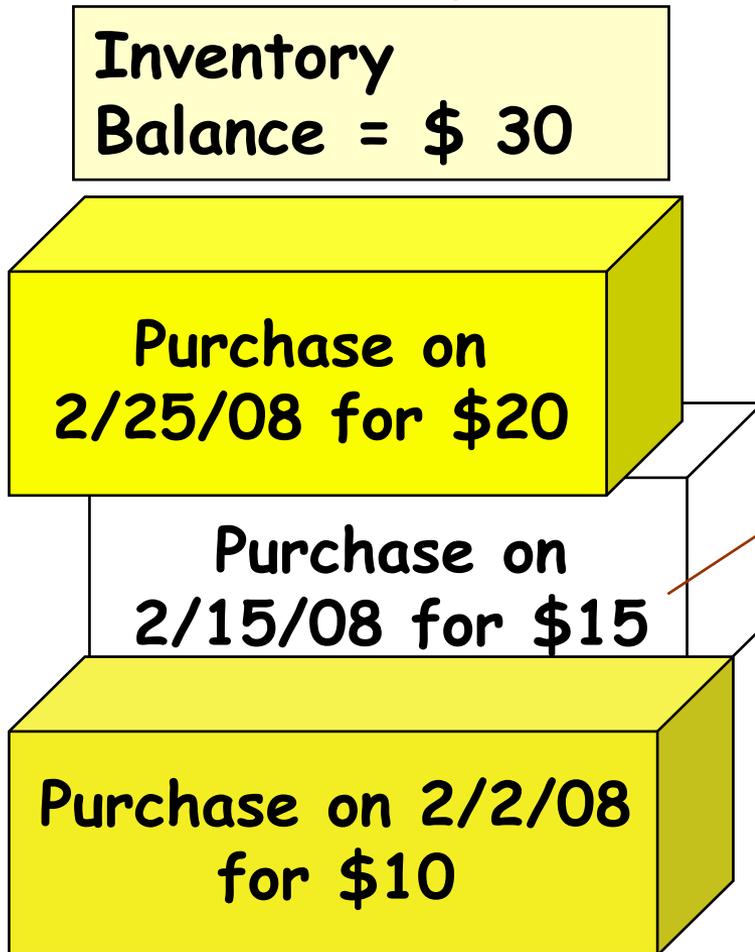
Young & Crazy Company makes the following purchases:

1. One item on 2/2/08 for \$10
2. One item on 2/15/08 for \$15
3. One item on 2/25/08 for \$20

Young & Crazy Company sells one item on 2/28/08 for \$90. What would be the balance of ending inventory, cost of goods sold, and net income for the month ended Feb. 28, 2008, assuming the company used the **Specific Identification** method to cost inventories and the item purchased on 2/15/08 is sold? Assume a tax rate of 30%.

Inventory Costing

"Specific Identification"



Young & Crazy Company Income Statement For the Month of Feb. 2008

Sales	\$ 90
Cost of goods sold	<u>15</u>
Gross profit	<u>75</u>
Expenses:	
Administrative	14
Selling	12
Interest	<u>7</u>
Total expenses	<u>33</u>
Income before tax	42
Taxes	<u>13</u>
Net Income	<u>\$ 29</u>

Inventory Costing

Specific Identification Method

An actual **physical flow costing method** in which items still in inventory are specifically costed to arrive at the total cost of the ending inventory.

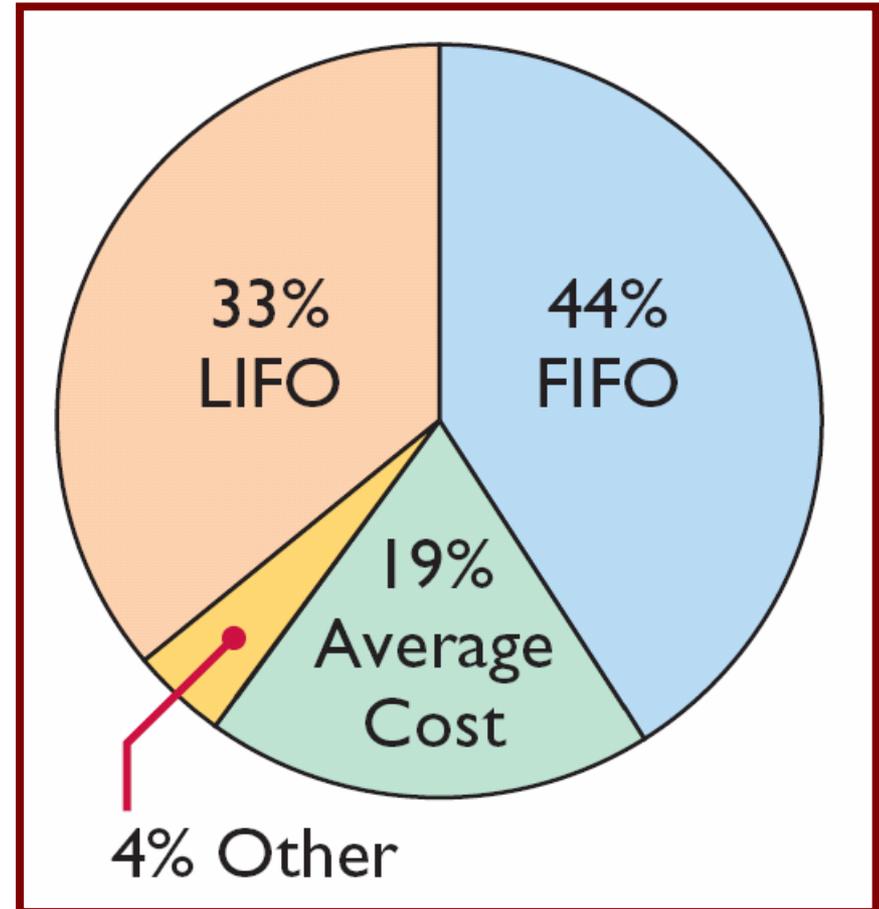
- Practice is relatively rare.
- Most companies make assumptions (**Cost Flow Assumptions**) about which units were sold.

Inventory Costing - Cost Flow Assumptions

Cost Flow Assumption
does not need to equal
Physical Movement of
Goods

Illustration 6-11

Use of cost flow methods in major U.S. companies



Inventory Costing - Cost Flow Assumptions

Example

Young & Crazy Company makes the following purchases:

1. One item on 2/2/08 for \$10
2. One item on 2/15/08 for \$15
3. One item on 2/25/08 for \$20

Young & Crazy Company sells one item on 2/28/08 for \$90. What would be the balance of ending inventory, cost of goods sold, and net income for the month ended Feb. 2008, assuming the company used the **FIFO**, **LIFO**, and **Average-cost** flow assumptions? Assume a tax rate of 30%.

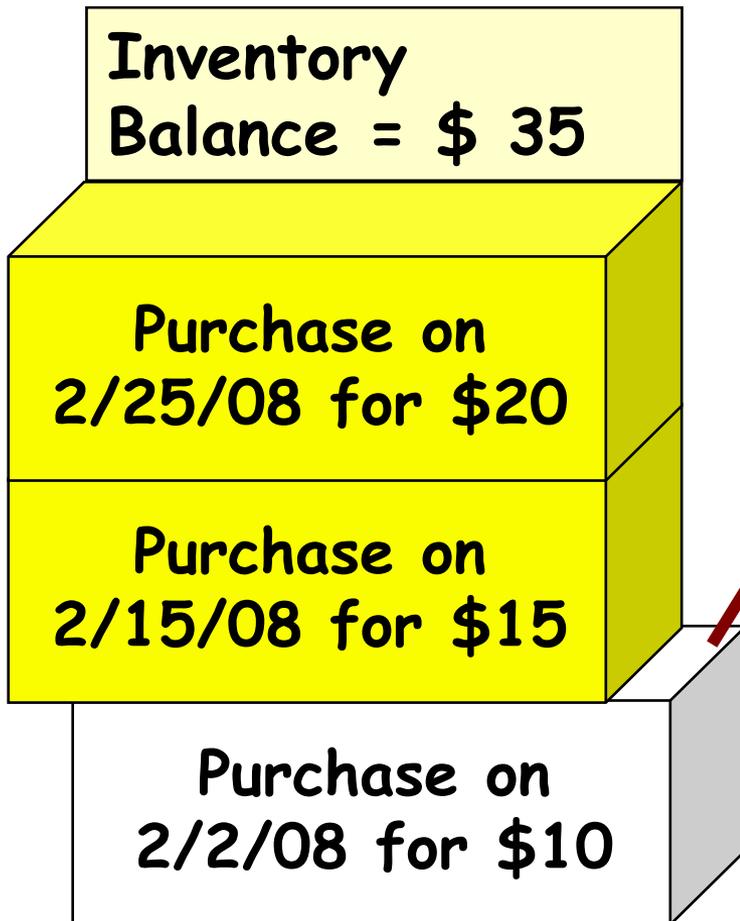
Inventory Costing - Cost Flow Assumptions

“First-In-First-Out (FIFO)”

- Earliest goods purchased are first to be sold.
- Often parallels actual physical flow of merchandise.
- Generally good business practice to sell oldest units first.

Inventory Costing - Cost Flow Assumptions

"First-In-First-Out (FIFO)"



Young & Crazy Company Income Statement For the Month of Feb. 2008

Sales	\$ 90
Cost of goods sold	<u>10</u>
Gross profit	<u>80</u>
Expenses:	
Administrative	14
Selling	12
Interest	<u>7</u>
Total expenses	<u>33</u>
Income before tax	<u>47</u>
Taxes	<u>14</u>
Net Income	<u>\$ 33</u>

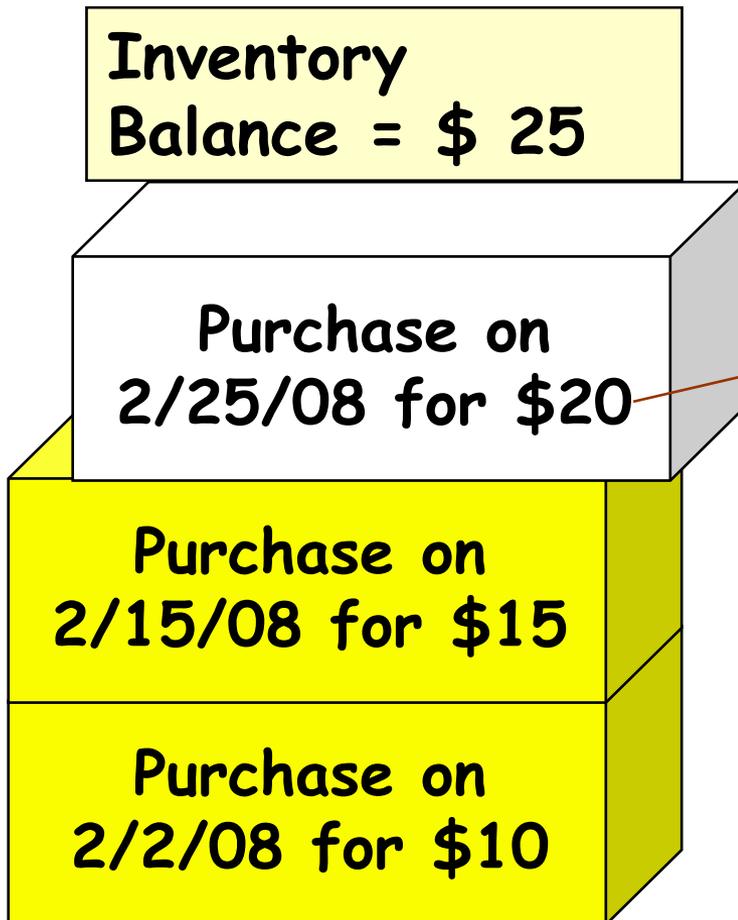
Inventory Costing - Cost Flow Assumptions

“Last-In-First-Out (LIFO)”

- Latest goods purchased are first to be sold.
- Seldom coincides with actual physical flow of merchandise.
- Exceptions include goods stored in piles, such as coal or hay.

Inventory Costing - Cost Flow Assumptions

"Last-In-First-Out (LIFO)"



Young & Crazy Company Income Statement For the Month of Feb. 2008

Sales	\$ 90
Cost of goods sold	<u>20</u>
Gross profit	<u>70</u>
Expenses:	
Administrative	14
Selling	12
Interest	<u>7</u>
Total expenses	<u>33</u>
Income before tax	<u>37</u>
Taxes	<u>11</u>
Net Income	<u>\$ 26</u>

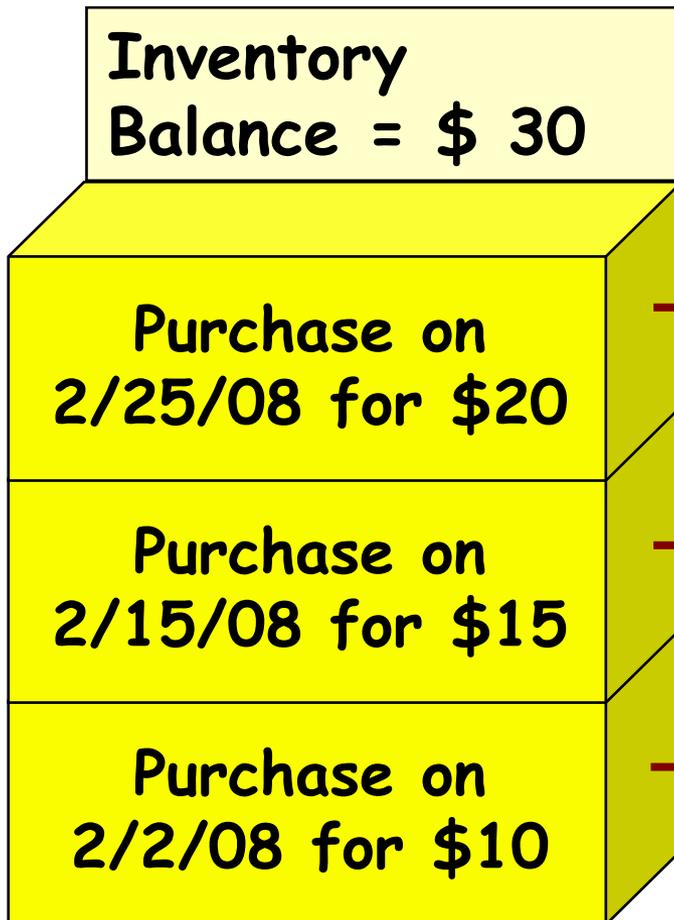
Inventory Costing - Cost Flow Assumptions

“Average-Cost”

- Allocates cost of goods available for sale on the basis of **weighted average unit cost** incurred.
- Assumes goods are similar in nature.
- Applies weighted average unit cost to the units on hand to determine cost of the ending inventory.

Inventory Costing - Cost Flow Assumptions

"Average Cost"



Young & Crazy Company Income Statement For the Month of Feb. 2008

Sales	\$ 90
Cost of goods sold	<u>15</u>
Gross profit	<u>75</u>
Expenses:	
Administrative	14
Selling	12
Interest	<u>7</u>
Total expenses	<u>33</u>
Income before tax	<u>42</u>
Taxes	<u>13</u>
Net Income	<u>\$ 29</u>

Inventory Costing - Cost Flow Assumptions

Comparative Financial Statement Summary

	FIFO	Average	LIFO
Sales	\$90	\$90	\$90
Cost of goods sold	10	15	20
Gross profit	80	75	70
Admin. & selling expense	33	33	33
Income before taxes	47	42	37
Income tax expense	14	13	11
Net income	<u>\$33</u>	<u>\$29</u>	<u>\$26</u>
Inventory balance	\$35	\$30	\$25

Inventory Costing - Cost Flow Assumptions

In Period of Rising Prices, **FIFO Reports:**

	FIFO	Average	LIFO
Sales	\$90	\$90	\$90
Lowest → Cost of goods sold	10	15	20
Gross profit	80	75	70
Admin. & selling expense	33	33	33
Income before taxes	47	42	37
Income tax expense	14	13	11
Highest ← Net income	<u>\$33</u>	<u>\$29</u>	<u>\$26</u>
Inventory balance	\$35	\$30	\$25

Inventory Costing - Cost Flow Assumptions

In Period of Rising Prices, **LIFO Reports:**

	FIFO	Average	LIFO
Sales	\$90	\$90	\$90
Highest → Cost of goods sold	10	15	20
Gross profit	80	75	70
Admin. & selling expense	33	33	33
Income before taxes	47	42	37
Income tax expense	14	13	11
Lowest ← Net income	<u>\$33</u>	<u>\$29</u>	<u>\$26</u>
Inventory balance	\$35	\$30	\$25

Inventory Costing - Cost Flow Assumptions

Review Question

The cost flow method that often parallels the actual physical flow of merchandise is the:

- a. FIFO method.
- b. LIFO method.
- c. average cost method.
- d. gross profit method.

Inventory Costing - Cost Flow Assumptions

Review Question

In a period of inflation, the cost flow method that results in the lowest income taxes is the:

- a. FIFO method.
- b. LIFO method.
- c. average cost method.
- d. gross profit method.

Inventory Costing - Cost Flow Assumptions

Discussion Question

Q6-12 Casey Company has been using the FIFO cost flow method during a prolonged period of rising prices. During the same time period, Casey has been paying out all of its net income as dividends. What adverse effects may result from this policy?

See notes page for discussion

Inventory Costing

Using Cost Flow Methods Consistently

- Method should be used consistently, enhances comparability.
- Although consistency is preferred, a company may change its inventory costing method.



Illustration 6-14
Disclosure of change
in cost flow method

QUAKER OATS

Notes to the Financial Statements

Note 1: Effective July 1, the Company adopted the LIFO cost flow assumption for valuing the majority of U.S. Grocery Products inventories. The Company believes that the use of the LIFO method better matches current costs with current revenues. The effect of this change on the current year was to decrease net income by \$16.0 million.

Inventory Costing

Lower-of-Cost-or-Market

When the value of inventory is lower than its cost

- Companies can “write down” the inventory to its market value in the period in which the price decline occurs.
- Market value = Replacement Cost
- Example of **conservatism**.

Inventory Costing

Lower-of-Cost-or-Market

BE6-7 Alou Appliance Center accumulates the following cost and market data at December 31.

<u>Inventory Categories</u>	<u>Cost Data</u>	<u>Market Data</u>	<u>Lower of Cost or Market</u>
Cameras	\$ 12,000	\$ 12,100	\$ 12,000
Camcorders	9,500	9,700	9,000
VCRs	14,000	12,800	12,800
			<u>\$ 33,800</u>

Compute the lower-of-cost-or-market valuation for the company's total inventory.

Inventory Errors

Common Cause:

- Failure to count or price inventory correctly.
- Not properly recognizing the transfer of legal title to goods in transit.
- Errors affect both the income statement and balance sheet.

Inventory Errors

Income Statement Effects

Inventory errors affect the computation of cost of goods sold and net income.

Illustration 6-16

$$\begin{array}{rcccl} \text{Beginning} & & \text{Cost of} & & \\ \text{Inventory} & + & \text{Goods} & - & \text{Ending} \\ & & \text{Purchased} & & \text{Inventory} \\ & & & & = \\ & & & & \text{Cost of} \\ & & & & \text{Goods} \\ & & & & \text{Sold} \end{array}$$

Illustration 6-17

<u>Inventory Error</u>	<u>Cost of Goods Sold</u>	<u>Net Income</u>
Understate beginning inventory	Understated	Overstated
Overstate beginning inventory	Overstated	Understated
Understate ending inventory	Overstated	Understated
Overstate ending inventory	Understated	Overstated

Inventory Errors

Income Statement Effects

Inventory errors affect the computation of cost of goods sold and net income **in two periods**.

- An error in ending inventory of the current period will have a **reverse effect on net income of the next accounting period**.
- Over the two years, the total net income is correct because the errors **offset each other**.
- The ending inventory depends entirely on the accuracy of taking and costing the inventory.

Inventory Errors

Illustration 6-18

	2008		2009	
	Incorrect	Correct	Incorrect	Correct
Sales	\$ 80,000	\$ 80,000	\$ 90,000	\$ 90,000
Beginning inventory	20,000	20,000	12,000	15,000
Cost of goods purchased	40,000	40,000	68,000	68,000
Cost of goods available	60,000	60,000	80,000	83,000
Ending inventory	12,000	15,000	23,000	23,000
Cost of good sold	48,000	45,000	57,000	60,000
Gross profit	32,000	35,000	33,000	30,000
Operating expenses	10,000	10,000	20,000	20,000
Net income	\$ 22,000	\$ 25,000	\$ 13,000	\$ 10,000

Combined income for 2-year period is correct.

(\$3,000)
Net Income
understated

\$3,000
Net Income
overstated

Inventory Errors

Review Question

Understating ending inventory will overstate:

- a. assets.
- b. cost of goods sold.
- c. net income.
- d. owner's equity.

Inventory Errors

Balance Sheet Effects

Effect of inventory errors on the balance sheet is determined by using the basic accounting equation:

Illustration 6-16

$$\begin{array}{ccccccc} \text{Beginning} & & \text{Cost of} & & \text{Ending} & & \text{Cost of} \\ \text{Inventory} & + & \text{Goods} & - & \text{Inventory} & = & \text{Goods} \\ & & \text{Purchased} & & & & \text{Sold} \end{array}$$

Illustration 6-19

<u>Ending Inventory Error</u>	<u>Assets</u>	<u>Liabilities</u>	<u>Stockholders' Equity</u>
Overstated	Overstated	No effect	Overstated
Understated	Understated	No effect	Understated

Statement Presentation and Analysis

Presentation

Balance Sheet - Inventory classified as current asset.

Income Statement - Cost of goods sold subtracted from sales.

There also should be disclosure of

- 1) major inventory classifications,
- 2) basis of accounting (cost or LCM), and
- 3) costing method (FIFO, LIFO, or average).

Statement Presentation and Analysis

Analysis

Inventory management is a double-edged sword

1. **High Inventory Levels** - may incur high carrying costs (e.g., investment, storage, insurance, obsolescence, and damage).
2. **Low Inventory Levels** - may lead to stockouts and lost sales.

Statement Presentation and Analysis

Inventory turnover measures the number of times on average the inventory is sold during the period.

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

Days in inventory measures the average number of days inventory is held.

$$\text{Days in Inventory} = \frac{\text{Days in Year (365)}}{\text{Inventory Turnover}}$$

Statement Presentation and Analysis

BE6-9 At December 31, 2008, the following information was available for J. Graff Company: ending inventory \$40,000, beginning inventory \$60,000, cost of goods sold \$270,000, and sales revenue \$380,000. Calculate **inventory turnover** and **days in inventory** for J. Graff Company.

**Inventory
Turnover**

$$\frac{\$270,000}{(\$60,000 + 40,000) / 2} = 5.4$$

**Days in
Inventory**

$$\frac{365}{5.4} = 67.59 \text{ days}$$

Inventory Cost Flow Methods in Perpetual Inventory Systems

The following data from Houston Electronics will be used to illustrate inventory costing under a perpetual system.

Illustration 6A-1

HOUSTON ELECTRONICS					
Astro Condensers					
<u>Date</u>	<u>Explanation</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>	<u>Balance in Units</u>
1/1	Beginning inventory	100	\$10	\$ 1,000	100
4/15	Purchases	200	11	2,200	300
8/24	Purchases	300	12	3,600	600
9/10	Sale	550			50
11/27	Purchases	400	13	5,200	450
				<u>\$12,000</u>	

Inventory Cost Flow Methods in Perpetual Inventory Systems

Computation of cost of goods sold and ending inventory under **FIFO** for Houston Electronics.

Illustration 6A-2

Date	Purchases	Cost of Goods Sold	Balance (in units and cost)	
January 1			(100 @ \$10)	\$ 1,000
April 15	(200 @ \$11) \$2,200		(100 @ \$10) } (200 @ \$11) }	\$ 3,200
August 24	(300 @ \$12) \$3,600		(100 @ \$10) } (200 @ \$11) }	\$ 6,800
September 10		(100 @ \$10) (200 @ \$11) (250 @ \$12)	(300 @ \$12) }	
		Cost of goods sold →	(50 @ \$12)	\$ 600
		\$6,200		
November 27	(400 @ \$13) \$5,200		(50 @ \$12) } (400 @ \$13) }	\$5,800

Ending inventory

Inventory Cost Flow Methods in Perpetual Inventory Systems

Computation of cost of goods sold and ending inventory under **LIFO** for Houston Electronics.

Illustration 6A-3

Date	Purchases	Cost of Goods Sold	Balance (in units and cost)	
January 1			(100 @ \$10)	\$1,000
April 15	(200 @ \$11) \$2,200		(100 @ \$10) } (200 @ \$11) }	\$3,200
August 24	(300 @ \$12) \$3,600		(100 @ \$10) } (200 @ \$11) }	\$6,800
September 10		(300 @ \$12) (200 @ \$11) (50 @ \$10)	(50 @ \$10)	\$ 500
	Cost of goods sold	\$6,300		
November 27	(400 @ \$13) \$5,200		(50 @ \$10) } (400 @ \$13) }	\$5,700

Ending inventory

Inventory Cost Flow Methods in Perpetual Inventory Systems

Computation of cost of goods sold and ending inventory under *moving average* for Houston Electronics.

Illustration 6A-4

Date	Purchases	Cost of Goods Sold	Balance (in units and cost)	
January 1			(100 @ \$10)	\$1,000
April 15	(200 @ \$11) \$2,200		(300 @ \$10.667)	\$3,200
August 24	(300 @ \$12) \$3,600		(600 @ \$11.333)	\$6,800
September 10		(550 @ \$11.333)	(50 @ \$11.333)	\$ 567
		\$6,233		
November 27	(400 @ \$13) \$5,200		(450 @ \$12.816)	\$5,767

↑
Cost of goods sold

↑
Ending inventory

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 7

ACCOUNTING INFORMATION SYSTEMS

Accounting Principles, Eighth Edition

Study Objectives

1. Identify the basic concepts of an accounting information system.
2. Describe the nature and purpose of a subsidiary ledger.
3. Explain how companies use special journals in journalizing.
4. Indicate how companies post a multi-column journal.

Accounting Information Systems

Basic Concepts of Accounting Information Systems

- Computerized accounting systems
- Manual accounting systems

Subsidiary Ledgers

- Example
- Advantages

Special Journals

- Sales journal
- Cash receipts journal
- Purchases journal
- Cash payments journal
- Effects of special journals on general journal

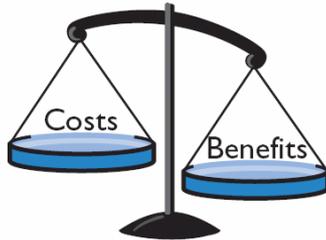
Basic Concepts of AIS

The **accounting information system (AIS)** collects and processes transaction data and communicates financial information to decision makers.

Includes:

- All steps in the accounting cycle.
- Documents that provide evidence of transactions.
- Manual or computerized accounting system.

Basic Concepts of AIS

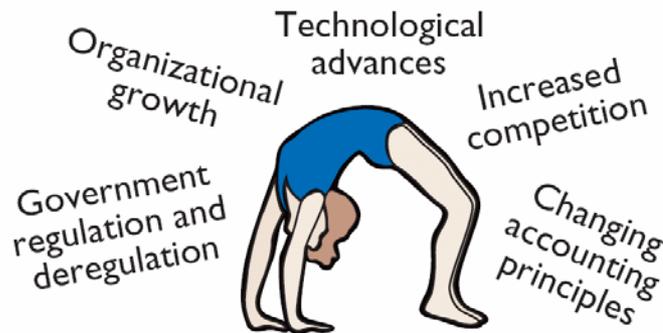


Cost Effectiveness - Benefits must outweigh the costs.

Illustration 7-1
Principles of an efficient and effective AIS.



Useful Output



Flexibility - The system should be sufficiently flexible to meet the resulting changes in the demands made upon it.

Basic Concepts of AIS

Computerized Accounting Systems

- Software programs (functions include sales, purchases, receivables, payables, cash receipts and disbursements, and payroll).
- Generate financial statements.
- Advantages:
 - Typically enter data only once.
 - Many human errors are eliminated.
 - More timely information.

Basic Concepts of AIS

Computerized Accounting Systems

- Choosing a software package
- Entry-Level Software
 - Common features and benefits:
 - ❖ Easy data access and report preparation
 - ❖ Audit trail
- Enterprise Resource Planning Systems

Basic Concepts of AIS

Manual Accounting Systems

- Perform each step in the accounting cycle by hand.
- Satisfactory in a company with a low volume of transactions.
- Must understand manual accounting systems to understand computerized accounting systems.

Subsidiary Ledgers

Used to keep track of individual balances.

Two common subsidiary ledgers are:

1. Accounts receivable (customers')
2. Accounts payable (creditors')

Each general ledger control account balance must equal the composite balance of the individual accounts in the related subsidiary ledger.

Subsidiary Ledgers

Relationship of general ledger and subsidiary ledgers

Illustration 7-3

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER

Aaron Co.

Date	Ref.	Debit	Credit	Balance
2008				
Jan 10		6,000		6,000
19			4,000	2,000

Branden Inc.

Date	Ref.	Debit	Credit	Balance
2008				
Jan 12		3,000		3,000
21			3,000	-----

Caron Co.

Date	Ref.	Debit	Credit	Balance
2008				
Jan 20		3,000		3,000
29			1,000	2,000

GENERAL LEDGER

Accounts Receivable No. 112

Date	Ref.	Debit	Credit	Balance
2008				
Jan 31		12,000		12,000
31			8,000	4,000

The subsidiary ledger is separate from the general ledger.

Accounts Receivable is a control account.

Subsidiary Ledgers

Advantages of Subsidiary Ledgers

1. Show in a single account transactions affecting one customer or one creditor.
2. Free the general ledger of excessive details.
3. Help locate errors in individual accounts.
4. Make possible a division of labor.

Special Journals

Used to record similar types of transactions.

Illustration 7-5

Sales Journal

Used for:
All sales of merchandise on account

Cash Receipts Journal

Used for:
All cash received (including cash sales)

Purchases Journal

Used for:
All purchases of merchandise on account

Cash Payments Journal

Used for:
All cash paid (including cash purchases)

General Journal

Used for:
Transactions that cannot be entered in a special journal, including correcting, adjusting, and closing entries

If a transaction cannot be recorded in a special journal, the company records it in the general journal.

Special Journals

Review Question

Each of the following is a subsidiary ledger except the:

- a. accounts receivable ledger.
- b. accounts payable ledger.
- c. customer's ledger.
- d. general ledger.**

Special Journals

Sales Journal

Illustration 7-6

Date	Account Debited	Invoice No.	Ref.	Accts. Receivable Dr. Sales Cr.	Cost of Goods Sold Dr. Merchandise Inventory Cr.
2008					
May 3	Abbot Sisters	101		10,600	6,360
7	Babson Co.	102		11,350	7,370
14	Carson Bros.	103		7,800	5,070
19	Deli Co.	104		9,300	6,510
21	Abbot Sisters	105		15,400	10,780
24	Deli Co.	106		21,210	15,900
27	Babson Co.	107		<u>14,570</u>	<u>10,200</u>
				<u>90,230</u>	<u>62,190</u>

- Under a **perpetual inventory system**, one entry at **selling price** in **Sales Journal** results in a debit to Accounts Receivable and a credit to Sales.
- Another entry **at cost** results in a debit to Cost of Goods Sold and a credit to Merchandise Inventory.

Special Journals

Illustration 7-7

POSTING THE SALES JOURNAL

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER				
Abbot Sisters				
Date	Ref.	Debit	Credit	Balance
2008				
May 3	SI	10,600		10,600
21	SI	15,400		26,000
Babson Co.				
Date	Ref.	Debit	Credit	Balance
2008				
May 7	SI	11,350		11,350
27	SI	14,570		25,920
Carson Bros.				
Date	Ref.	Debit	Credit	Balance
2008				
May 14	SI	7,800		7,800
Deli Co.				
Date	Ref.	Debit	Credit	Balance
2008				
May 19	SI	9,300		9,300
24	SI	21,210		30,510

SALES JOURNAL					
Date	Account Debited	Invoice No.	Ref.	Accts. Receivable Dr. Sales Cr.	Cost of Goods Sold Dr. Merchandise Inventory Cr.
2008					
May 3	Abbot Sisters	101	✓	10,600	6,360
7	Babson Co.	102	✓	11,350	7,370
14	Carson Bros.	103	✓	7,800	5,070
19	Deli Co.	104	✓	9,300	6,510
21	Abbot Sisters	105	✓	15,400	10,780
24	Deli Co.	106	✓	21,210	15,900
27	Babson Co.	107	✓	14,570	10,200
				<u>90,230</u>	<u>62,190</u>
				(112) / (401)	(505) / (120)

Companies make daily postings from the sales journal to the individual accounts receivable in the subsidiary ledger.

Special Journals

Illustration 7-7

POSTING THE SALES JOURNAL

GENERAL LEDGER				
Accounts Receivable No. 112				
Date	Ref.	Debit	Credit	Balance
2008				
May 31	SI	90,230		90,230
Merchandise Inventory No. 120				
Date	Ref.	Debit	Credit	Balance
2008				
May 31	SI		62,190	62,190 ¹
Sales No. 401				
Date	Ref.	Debit	Credit	Balance
2008				
May 31	SI		90,230	90,230
Cost of Goods Sold No. 505				
Date	Ref.	Debit	Credit	Balance
2008				
May 31	SI	62,190		62,190

SALES JOURNAL					
Date	Account Debited	Invoice No.	Ref.	Accts. Receivable Dr. Sales Cr.	Cost of Goods Sold Dr. Merchandise Inventory Cr.
2008					
May 3	Abbot Sisters	101	✓	10,600	6,360
7	Babson Co.	102	✓	11,350	7,370
14	Carson Bros.	103	✓	7,800	5,070
19	Deli Co.	104	✓	9,300	6,510
21	Abbot Sisters	105	✓	15,400	10,780
24	Deli Co.	106	✓	21,210	15,900
27	Babson Co.	107	✓	14,570	10,200
				<u>90,230</u>	<u>62,190</u>
				(112) / (401)	(505) / (120)

Posting to the general ledger is done monthly.

Special Journals

Advantages of Sales Journal

- One-line entry for each sales transaction saves time.
- Only totals, rather than individual entries, are posted to the general ledger.
- A division of labor results.

Special Journals

Cash Receipts Journal

Illustration 7-9

Date	Account Credited	Ref.	Cash Dr.	Sales Discounts Dr.	Accounts Receivable Cr.	Sales Cr.	Other Accounts Cr.	Cost of Goods Sold Dr. Mdse. Inv. Cr.
2008								
May 1	D.A. Karns, Capital	301	5,000				5,000	
7			1,900			1,900		1,240
10	Abbot Sisters	√	10,388	212	10,600			
12			2,600			2,600		1,690
17	Babson Co.	√	11,123	227	11,350			
22	Notes Payable	200	6,000				6,000	
23	Carson Bros.	√	7,644	156	7,800			
28	Deli Co.	√	9,114	186	9,300			
			<u>53,769</u>	<u>781</u>	<u>39,050</u>	<u>4,500</u>	<u>11,000</u>	<u>2,930</u>
			(101)	(414)	(112)	(401)	(x)	(505)/(120)

- In the **cash receipts journal**, companies record all receipts of cash.
- The posting of the cash receipts journal is similar to the posting of the sale journal. See complete Illustration 7-9 in the text.

Special Journals

Review Question

Cash sales of merchandise are recorded in the:

- a. cash payments journal.
- ⓑ** cash receipts journal.
- c. general journal.
- d. sales journal.

Special Journals

Review Question

Which of the following is not one of the credit columns in the cash receipts journal:

- a. Other accounts.
- b. Accounts payable.
- c. Accounts receivable.
- d. Sales.

Special Journals

Illustration 7-13

Purchases Journal

ACCOUNTS PAYABLE SUBSIDIARY LEDGER

Eaton and Howe Inc.

Date	Ref.	Debit	Credit	Balance
2008				
May 10	PI		7,200	7,200
29	PI		12,600	19,800

Fabor and Son

Date	Ref.	Debit	Credit	Balance
2008				
May 14	PI		6,900	6,900
26	PI		8,700	15,600

Jasper Manufacturing Inc.

Date	Ref.	Debit	Credit	Balance
2008				
May 6	PI		11,000	11,000
19	PI		17,500	28,500

PURCHASES JOURNAL

Date	Account Credited	Terms	Ref.	Merchandise Inventory Dr.	Accounts Payable Cr.
2008					
May 6	Jasper Manufacturing Inc.	2/10, n/30	✓	11,000	
10	Eaton and Howe Inc.	3/10, n/30	✓	7,200	
14	Fabor and Son	1/10, n/30	✓	6,900	
19	Jasper Manufacturing Inc.	2/10, n/30	✓	17,500	
26	Fabor and Son	1/10, n/30	✓	8,700	
29	Eaton and Howe Inc.	3/10, n/30	✓	12,600	
				<u>63,900</u>	
				(120)/(201)	

Daily postings are made from the purchases journal to the accounts payable subsidiary ledger.

Special Journals

Illustration 7-13

Purchases Journal

GENERAL LEDGER				
Merchandise Inventory No. 120				
Date	Ref.	Debit	Credit	Balance
2008				
May 31	SI		62,190	62,190
31	CRI		2,930	65,120
31	PI	63,900		1,220
Accounts Payable No. 201				
Date	Ref.	Debit	Credit	Balance
2008				
May 31	PI		63,900	63,900

PURCHASES JOURNAL				
Date	Account Credited	Terms	Ref.	Merchandise Inventory Dr. Accounts Payable Cr.
2008				
May 6	Jasper Manufacturing Inc.	2/10, n/30	✓	11,000
10	Eaton and Howe Inc.	3/10, n/30	✓	7,200
14	Fabor and Son	1/10, n/30	✓	6,900
19	Jasper Manufacturing Inc.	2/10, n/30	✓	17,500
26	Fabor and Son	1/10, n/30	✓	8,700
29	Eaton and Howe Inc.	3/10, n/30	✓	12,600
				<u>63,900</u>
				(120)/(201)

At the end of the accounting period, the company posts totals to the general ledger.

Special Journals

Review Question

All of the following are advantages of using subsidiary ledgers except they:

- a. show transactions affecting one customer or one creditor in a single account.
- b. free the general ledger of excessive details.
- c** eliminate errors in individual accounts.
- d. make possible a division of labor.

Special Journals

Cash Payments Journal

Illustration 7-16

CASH PAYMENTS JOURNAL							CPI
Date	Ck. No.	Account Debited	Ref.	Other Accounts Dr.	Accounts Payable Dr.	Merchandise Inventory Cr.	Cash Cr.
2008							
May 1	101	Prepaid Insurance	130	1,200			1,200
3	102	Mdse. Inventory	120	100			100
8	103	Mdse. Inventory	120	4,400			4,400
10	104	Jasper Manuf. Inc.	✓		11,000	220	10,780
19	105	Eaton & Howe Inc.	✓		7,200	216	6,984
23	106	Fabor and Son	✓		6,900	69	6,831
28	107	Jasper Manuf. Inc.	✓		17,500	350	17,150
30	108	D.A. Karns, Drawing	306	500			500
				<u>6,200</u>	<u>42,600</u>	<u>855</u>	<u>47,945</u>
				(x)	(201)	(120)	(101)

- In a **cash payments (cash disbursements) journal**, companies record all disbursements of cash.
- The procedures for posting the cash payments journal are similar to those for other journals.

Special Journals

Review Question

Credit purchases of equipment or supplies other than merchandise are recorded in the:

- a. cash payments journal.
- b. cash receipts journal.
- c.** general journal.
- d. purchases journal.

Special Journals

Review Question

Cash payments of merchandise are recorded in the:

- a. cash payments journal.
- b. cash receipts journal.
- c. general journal.
- d. purchases journal.

Special Journals

Effects of Special Journals on the General Journal

- Special journals substantially reduce the number of entries that companies make in the general journal.
- Only transactions that cannot be entered in a special journal are recorded in the general journal.
- Also, correcting, adjusting, and closing entries are made in the general journal.

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 8

INTERNAL CONTROL AND CASH

Accounting Principles, Eighth Edition

Study Objectives

1. Define internal control.
2. Identify the principles of internal control.
3. Explain the applications of internal control principles to cash receipts.
4. Explain the applications of internal control principles to cash disbursements.
5. Describe the operation of a petty cash fund.
6. Indicate the control features of a bank account.
7. Prepare a bank reconciliation.
8. Explain the reporting of cash.

Internal Control and Cash

Internal Control

- The Sarbanes-Oxley Act
- Principles
- Limitations

Cash Controls

- Control over cash receipts
- Control over cash disbursements

Use of a Bank

- Making deposits
- Writing checks
- Bank statements
- Reconciling the bank account

Reporting Cash

- Cash equivalents
- Restricted cash
- Compensating balances

Internal Control

Methods and measures adopted to:

1. Safeguard assets.
2. Enhance accuracy and reliability of accounting records. Reduce risk of:
 - a. Errors (unintentional)
 - b. Irregularities (intentional)

Under the Sarbanes-Oxley Act, all publicly traded U.S. corporations are **required** to maintain an adequate system of internal control.

Internal Control

The Sarbanes-Oxley Act

Companies must

- develop principles of control over financial reporting.
- continually verify that controls are working.

Independent auditors must attest to the level of internal control.

SOX created the Public Company Accounting Oversight Board (PCAOB).

Internal Control

Principles of Internal Control

Illustration 8-1

Measures vary with

- size and nature of the business.
- management's control philosophy.

Establishment of responsibility	Physical, mechanical, and electronic controls
Segregation of duties	Independent internal verification
Documentation procedures	Other controls

Internal Control

Principles of Internal Control

ESTABLISHMENT OF RESPONSIBILITY

Control is most effective when only one person is responsible for a given task.

SEGREGATION OF DUTIES

Related duties, including physical custody and record keeping, should be assigned to different individuals.

DOCUMENTATION PROCEDURES

Companies should use prenumbered documents for all documents should be accounted for.

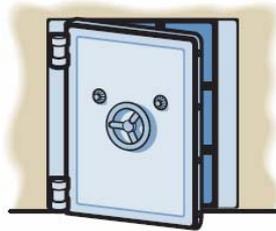
Internal Control

Principles of Internal Control

Illustration 8-3

PHYSICAL, MECHANICAL, AND ELECTRONIC CONTROLS

Physical



Safes, vaults, and safety deposit boxes for cash and business papers

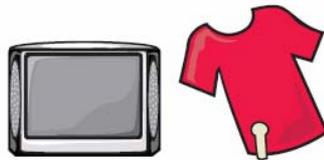


Locked warehouses and storage cabinets for inventories and records



Computer facilities with pass key access or fingerprint or eyeball scans

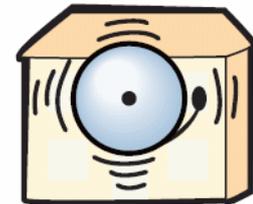
Mechanical and Electronic



Television monitors and garment sensors to deter theft



Time clocks for recording time worked



Alarms to prevent break-ins

Internal Control

Principles of Internal Control

INDEPENDENT INTERNAL VERIFICATION

1. Records periodically verified by an employee who is independent.
2. Discrepancies reported to management.

OTHER CONTROLS

1. Bond employees.
2. Rotate employees' duties and require vacations.
3. Conduct background checks.

Internal Control

Limitations of Internal Control

- Costs should not exceed benefit.
- Human element.
- Size of the business.

Cash Controls

Internal Control over Cash Receipts

Establishment of Responsibility

Only designated personnel are authorized to handle cash receipts (cashiers)

Documentation Procedures

Use remittance advice (mail receipts), cash register tapes, and deposit slips

Independent Internal Verification

Supervisors count cash receipts daily; treasurer compares total receipts to bank deposits daily

Segregation of Duties

Different individuals receive cash, record cash receipts, and hold the cash

Physical, Mechanical, and Electronic Controls

Store cash in safes and bank vaults; limit access to storage areas; use cash registers

Other Controls

Bond personnel who handle cash; require employees to take vacations; deposit all cash in bank daily

Illustration 8-5

Cash Controls

Discussion Question

Q8-3. At the corner grocery store, all sales clerks make change out of one cash register drawer. Is this a violation of internal control? Why?

See notes page for discussion

Cash Controls

Cash consists of coins, currency, checks, money orders, and money on hand or on deposit in a bank.

Cash receipts come from:

- cash sales
- collections on account from customers
- receipt of interest, rent, and dividends
- investments by owners
- bank loans
- proceeds from the sale of noncurrent assets

Cash Controls

Discussion Question

Q8-8. The management of Sewell Company asks you, as the company accountant, to explain (a) the concept of reasonable assurance in internal control and (b) the importance of the human factor in internal control.

See notes page for discussion

Over-the-Counter Receipts

Sales Department



Cashier ring up sales

↓
Supervisor

1. reads register totals
2. makes cash counts
3. prepares cash count sheets

Illustration 8-7

Cash

Count sheets

Register tapes

↓
Prepare daily summary

↓
Prepare deposit slip

Deposit slip 1

Cash

Deposit slip 2

Daily Cash Summary 2

Daily Cash Summary 1

↓
Bank
(deposit)

↓
Treasurer
(verification)

↓
Accounting
(record)

Mail Receipts

Control Procedures:

- Mail receipts should be opened by two people, a list prepared, and each check endorsed.
- Copy of the list, along with the checks and remittance advices, sent to cashier's department.
- Cashier adds the checks to the over-the-counter receipts and prepares a daily cash summary and makes the daily bank deposit.
- Copy of list sent to treasurer's office for comparison with total shown on daily cash summary.

Cash Controls

Review Question

Permitting only designated personnel to handle cash receipts

is an application of the principle of:

- a. segregation of duties.
- b.** establishment of responsibility.
- c. independent check.
- d. other controls.

Cash Controls

Internal Control over Cash Disbursements

Generally, internal control over cash disbursements is more effective when companies pay by check, rather than by cash.

Applications:

- Voucher system
- Electronic funds transfers (EFT) system
- Petty cash fund

Cash Controls

Internal Control over Cash Disbursements

Establishment of Responsibility

Only designated personnel are authorized to sign checks (treasurer)

Segregation of Duties

Different individuals approve and make payments; check signers do not record disbursements

Documentation Procedures

Use prenumbered checks and account for them in sequence; each check must have an approved invoice

Other Controls

Stamp invoices
PAID

Independent Internal Verification

Compare checks to invoices; reconcile bank statement monthly

Physical, Mechanical, and Electronic Controls

Store blank checks in safes, with limited access; print check amounts by machine in indelible ink

Illustration 8-8

Cash Controls

Discussion Question

Q8-14. Joe Griswold Company's internal controls over cash disbursements provide for the treasurer to sign checks imprinted by a checkwriting machine in indelible ink after comparing the check with the approved invoice. Identify the internal control principles that are present in these controls.

See notes page for discussion

Cash Controls

Review Question

The use of prenumbered checks in disbursing cash is an application of the principle of:

- a. establishment of responsibility.
- b. segregation of duties.
- c. physical, mechanical, and electronic controls.
- d. documentation procedures.**

Internal Control over Cash Disbursements

Voucher System

- Network of approvals, by authorized individuals, to ensure all disbursements by check are proper.
- A **voucher** is an authorization form prepared for each expenditure.

Internal Control over Cash Disbursements

Electronic Funds Transfers (EFT)

- Disbursement systems that uses wire, telephone, or computers to transfer cash balances between locations.

Cash Controls

Internal Control over Cash Disbursements

Petty Cash Fund - Used to pay small amounts.

Involves:

1. establishing the fund,
2. making payments from the fund, and
3. replenishing the fund.

Cash Controls

E8-8 Lincolnville Company uses an imprest petty cash system. The fund was established on March 1 with a balance of \$100. During March the following petty cash receipts were found in the petty cash box.

March 5	Stamp inventory	\$39
March 7	Freight-out	21
March 9	Miscellaneous expense	6
March 11	Travel expense	24
March 14	Miscellaneous expense	5

The fund was replenished on March 15 when the fund contained \$3 in cash. On March 20, the amount in the fund was increased to \$150.

Instructions: Journalize the entries in March that pertain to the operation of the petty cash fund.

Cash Controls

E8-8 The fund was established on March 1 with a balance of \$100.

March 1	Petty cash	100	
	Cash		100

Cash Controls

E8-8 The fund was replenished on March 15 when the fund contained \$3 in cash.

March 15	Postage expense	39	
	Freight-out	21	
	Miscellaneous expense	11	
	Travel expense	24	
	Cash over and short	2	
	Cash		97

Cash Controls

E8-8 On March 20, the amount in the fund was increased to \$150.

March 20	Petty cash	50	
	Cash		50

Use of a Bank

Contributes to good internal control over cash.

- Minimizes the amount of currency on hand.
- Creates a double record of bank transactions.
- Bank reconciliation.

Use of a Bank

Making Bank Deposits

Authorized employee should make deposit.

Illustration 8-10

Bank Code Numbers

DEPOSIT TICKET

LAIRD COMPANY
77 West Central Avenue,
Midland, Michigan 48654

DATE April 19 2008

CASH	CURRENCY	462	10
	COIN		
LIST CHECKS SINGLY			
TOTAL FROM OTHER SIDE		1116	80
TOTAL		1578	90
TOTAL FROM OTHER SIDE			
NET DEPOSIT		1578	90

74-102/724

USE OTHER SIDE FOR ADDITIONAL LISTINGS
BE SURE EACH ITEM IS PROPERLY ENDORSED

NBT National Bank & Trust
Midland, Michigan 48654

⑆012410497⑆ 457923⑆02 75

CHECKS AND OTHER ITEMS ARE RECEIVED FOR DEPOSIT SUBJECT TO THE PROVISIONS OF THE UNIFORM COMMERCIAL CODE OR ANY APPLICABLE COLLECTION AGREEMENT

Front Side

Reverse Side

CHECKS	LIST SINGLY	DOLLARS	CENTS
1	74 - 331/724	175	40
2	61 - 157/220	292	60
3	19 - 401/710	337	55
4	22 - 815/6666	165	72
5	15 - 360/011	145	53
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
TOTAL		1116	80

ENTER TOTAL ON THE FRONT OF THIS TICKET

Use of a Bank

Writing Checks

Illustration 8-11

Written order signed by depositor directing bank to pay a specified sum of money to a designated recipient.

Maker → LAIRD COMPANY
77 West Central Avenue,
Midland, Michigan 48654

Payee → Pay to the order of Watkins Wholesale Supply \$ 1525.00
Fifteen hundred twenty-five and ⁰⁰/₁₀₀ Dollars

Payer → **NB** National Bank & Trust
Midland, Michigan 48654

W.F. Faine

No. **448**
April 16 2008 74-102/724

Memo _____
⑆012460497⑆ 457923⑆02 448

Use of a Bank

Bank Statements

Debit Memorandum

- Bank service charge
- NSF (not sufficient funds)

Credit Memorandum

- Collect notes receivable.
- Interest earned.

Illustration 8-12

Balance Last Statement		Deposits and Credits		Checks and Debits		Balance This Statement	
		No.	Total Amount	No.	Total Amount		
13,266.90		20	34,808.10	26	32,154.58	15,907.46	

CHECKS AND DEBITS			DEPOSITS AND CREDITS		DAILY BALANCE	
Date	No.	Amount	Date	Amount	Date	Amount
4-2	435	644.95	4-2	4,276.85	4-2	16,888.80
4-5	436	3,260.00	4-3	2,137.50	4-3	18,249.65
4-4	437	1,185.79	4-5	1,350.47	4-4	17,063.86
4-5	438	776.65	4-7	982.46	4-5	15,154.33
4-8	439	1,781.70	4-8	1,320.28	4-7	14,648.89
4-7	440	1,487.90	4-9 CM	1,035.00	4-8	11,767.47
4-8	441	2,420.00	4-11	2,720.00	4-9	12,802.47
4-11	442	1,585.60	4-12	757.41	4-11	13,936.87
4-12	443	1,226.00	4-13	1,218.56	4-12	13,468.28
4-29	NSF	425.60	4-27	1,545.57	4-27	13,005.45
4-29	459	1,080.30	4-29	2,929.45	4-29	14,429.00
4-30	DM	30.00	4-30	2,128.60	4-30	15,907.46
4-30	461	620.15				

Symbols: CM Credit Memo DM Debit Memo	EC Error Correction INT Interest Earned	NSF Not Sufficient Funds SC Service Charge	Reconcile Your Account Promptly
--	--	---	---------------------------------

Use of a Bank

Review Question

The control features of a bank account do *not* include:

- a. having bank auditors verify the correctness of the bank balance per books.
- b. minimizing the amount of cash that must be kept on hand.
- c. providing a double record of all bank transactions.
- d. safeguarding cash by using a bank as a depository.

Use of a Bank

Reconciling the Bank Account

Reconcile balance per books and balance per bank to their adjusted (corrected) cash balances.

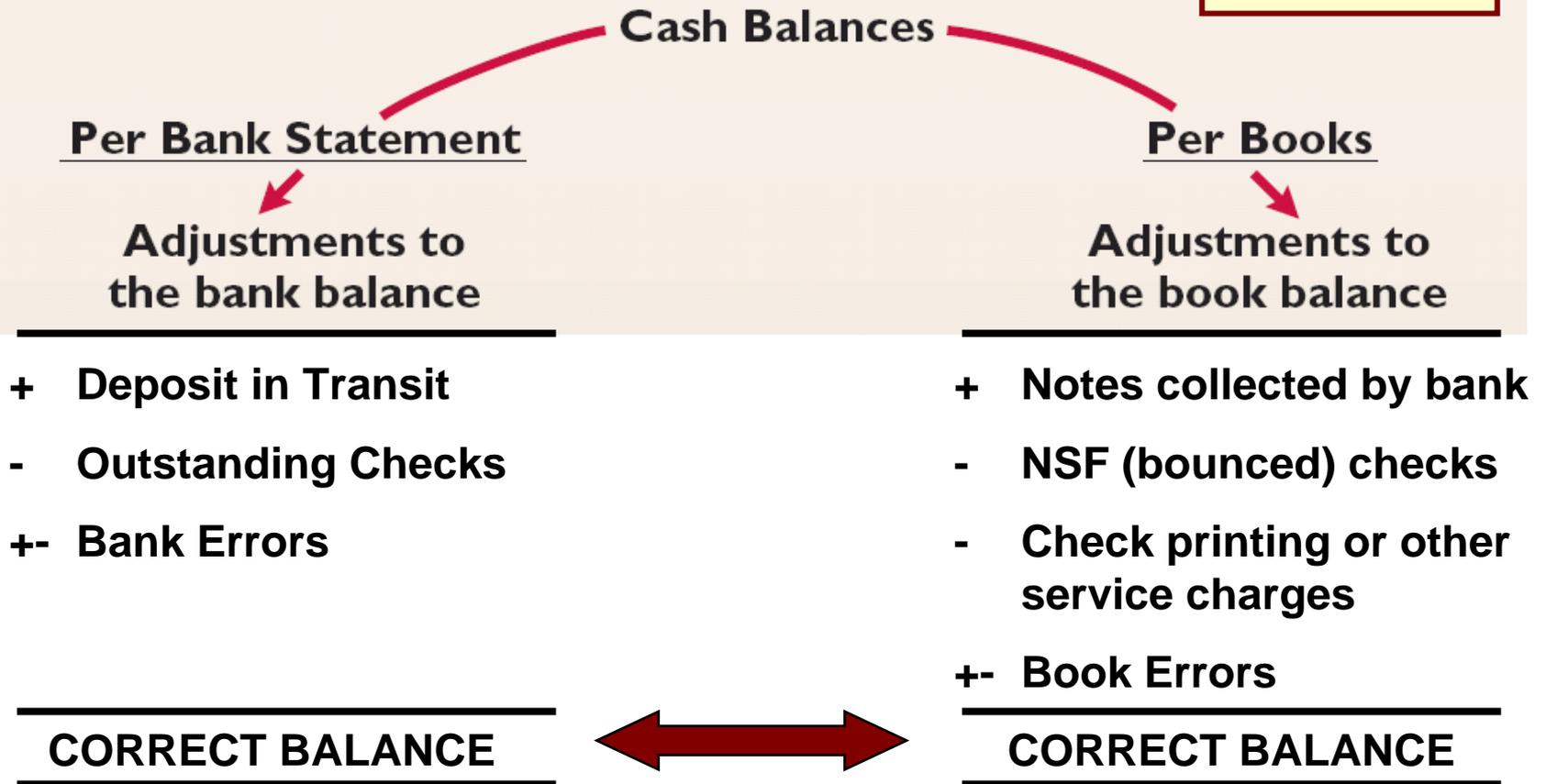
Reconciling Items:

1. Deposits in transit.
2. Outstanding checks.
3. Errors.
4. Bank memoranda.

Use of a Bank

Reconciliation Procedures

Illustration 8-13



Use of a Bank

E8-11 The following information pertains to Family Video Company.

1. Cash balance per bank, July 31, \$7,263.
2. Cash balance per books, July 31, \$7,284.
3. July bank service charge not recorded by the depositor \$28.
4. Deposits in transit, July 31, \$1,500.
5. Bank collected \$900 note for Family in July, plus interest \$36, less fee \$20. The collection has not been recorded by Family, and no interest has been accrued.
6. Outstanding checks, July 31, \$591.

Instructions

- a) Prepare a bank reconciliation at July 31.
- b) Journalize the adjusting entries at July 31 on the books of Family Video Company.

Use of a Bank

E8-11 a) Prepare a bank reconciliation at July 31.

Cash balance per bank statement	\$7,263
Add: Deposit in transit	1,500
Less: Outstanding checks	(591)
Adjusted cash balance per bank	<u>\$8,172</u>

Cash balance per books	\$7,284
Add: Collection of notes receivable	900
Collection of interest	36
Less: Bank service charge	(28)
Note collection fee	(20)
Adjusted cash balance per books	<u>\$8,172</u>

Use of a Bank

E8-11 b) Journalize the adjusting entries at July 31 on the books of Family Video Company.

		<u>Dr.</u>	<u>Cr.</u>
July 31	Miscellaneous expense	28	
	Cash		28
July 31	Cash	916	
	Miscellaneous expense	20	
	Interest revenue		36
	Notes receivable		900

Note: Adjusting journal entry includes only the adjustments to the cash balance per books.

Use of a Bank

Review Question

The reconciling item in a bank reconciliation that will result in an adjusting entry by the depositor is:

- a. outstanding checks.
- b. deposit in transit.
- c. a bank error.
- d. bank service charges.**

Use of a Bank

Review Question

Which of the following statements correctly describes the reporting of cash?

- a. Cash cannot be combined with cash equivalents.
- b. Restricted cash funds may be combined with Cash.
- c. Cash is listed first in the current assets section.
- d. Restricted cash funds cannot be reported as a current asset.

Recording Process

Discussion Question

Q8-20. Lori Figgs is confused about the lack of agreement between the cash balance per books and the balance per the bank. Explain the causes for the lack of agreement to Lori, and give an example of each cause.

See notes page for discussion

Reporting Cash

Most liquid asset, listed first in current assets section of balance sheet.



Illustration 8-16

EASTMAN KODAK COMPANY

Balance Sheets (partial)

	<u>2005</u>	<u>2004</u>
Current assets (in millions)		
Cash and cash equivalents	\$1,255	\$1,665

- Cash equivalents
- Restricted cash
- Compensating balances

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 9

ACCOUNTING FOR RECEIVABLES

Accounting Principles, Eighth Edition

Study Objectives

1. Identify the different types of receivables.
2. Explain how companies recognize accounts receivable.
3. Distinguish between the methods and bases companies use to value accounts receivable.
4. Describe the entries to record the disposition of accounts receivable.
5. Compute the maturity date of and interest on notes receivable.
6. Explain how companies recognize notes receivable.
7. Describe how companies value notes receivable.
8. Describe the entries to record the disposition of notes receivable.
9. Explain the statement presentation and analysis of receivables.

Accounting for Receivables

Types of Receivables

- Accounts receivable
- Notes receivable
- Other receivables

Accounts Receivable

- Recognizing accounts receivable
- Valuing accounts receivable
- Disposing of accounts receivable

Notes Receivable

- Determining maturity date
- Computing interest
- Recognizing notes receivable
- Valuing notes receivable
- Disposing of notes receivable

Statement Presentation and Analysis

- Presentation
- Analysis

Types of Receivables

Amounts due from individuals and other companies that are expected to be collected in cash.

Amounts owed by customers that result from the sale of goods and services.

**Accounts
Receivable**

Claims for which formal instruments of credit are issued as proof of debt.

**Notes
Receivable**

"Nontrade" (interest, loans to officers, advances to employees, and income taxes refundable).

**Other
Receivables**

Accounts Receivable

Three accounting issues:

1. **Recognizing** accounts receivable.
2. **Valuing** accounts receivable.
3. **Disposing of** accounts receivable.

Recognizing Accounts Receivable

The following exercise was illustrated in Chapter 5. For simplicity, inventory and cost of goods sold have been omitted.

Recognizing Accounts Receivable

E5-5 Presented are transactions related to Wheeler Company.

1. On December 3, Wheeler Company sold \$500,000 of merchandise to Hashmi Co., terms 2/10, n/30, FOB shipping point.
2. On December 8, Hashmi Co. was granted an allowance of \$27,000 for merchandise purchased on December 3.
3. On December 13, Wheeler Company received the balance due from Hashmi Co.

Instructions: Prepare the journal entries to record these transactions on the books of Wheeler Company using a perpetual inventory system.

Recognizing Accounts Receivable

E5-5 Prepare the journal entries for Wheeler Company .

1. On December 3, Wheeler Company sold \$500,000 of merchandise to Hashmi Co., terms 2/10, n/30, FOB shipping point.

Dec. 3	Accounts receivable	500,000	
	Sales		500,000

Recognizing Accounts Receivable

E5-5 Prepare the journal entries for Wheeler Company.

2. On December 8, Hashmi Co. was granted an **allowance** of \$27,000 for merchandise purchased on December 3.

Dec. 8	Sales returns and allowances	27,000	
	Accounts receivable		27,000

Recognizing Accounts Receivable

E5-5 Prepare the journal entries for Wheeler Company .

3. On December 13, Wheeler Company received the balance due from Hashmi Co.

Dec. 13	Cash	463,540	***
	Sales discounts	9,460	**
	Accounts receivable		473,000 *

* (\$500,000 - \$27,000)

** [(\$500,000 - \$27,000) × 2%]

*** (\$473,000 - \$9,460)

Accounts Receivable

Valuing Accounts Receivables

- Are reported as a current asset on the balance sheet.
- Are reported at the amount the company thinks they will be able to collect.
- Sales on account raise the possibility of accounts not being collected.
- Valuation can be difficult because an unknown amount of receivables will become uncollectible.

Valuing Accounts Receivable

Methods of Accounting for Uncollectible Accounts

Direct Write-Off

Theoretically undesirable:

- no matching.
- receivable not stated at net realizable value.
- not acceptable for financial reporting.

Allowance Method

Losses are estimated:

- better matching.
- receivable stated at net realizable value.
- required by GAAP.

Presentation of Accounts Receivable

Assets

Current Assets:

Cash		\$ 346
Accounts receivable	500	
Less: Allowance for doubtful accounts	<u>25</u>	475
Merchandise inventory		812
Prepaid expenses		<u>40</u>
Total current assets		<u>1,673</u>

Presentation of Accounts Receivable

Assets

Current Assets:

Cash	\$ 346
Accounts receivable, net of \$25 allowance for doubtful accounts	475
Merchandise inventory	812
Prepaid expenses	40
Total current assets	<u>1,673</u>

Valuing Accounts Receivable

Allowance Method for Uncollectible Accounts

1. Companies **estimate** uncollectible accounts receivable.
2. To record estimated uncollectibles, companies debit Bad Debts Expense and credit Allowance for Doubtful Accounts (a contra-asset account).
3. When companies write off specific uncollectible accounts, they debit Allowance for Doubtful Accounts and credit Accounts Receivable.

Valuing Accounts Receivable

E9-6 On December 31, 2008, Jarnigan Co. estimated that 2% of its net sales of \$400,000 will become uncollectible. The company recorded this amount as an addition to Allowance for Doubtful Accounts. On May 11, 2009, Jarnigan Co. determined that Terry Frye's account was uncollectible and wrote off \$1,100. On June 12, 2009, Frye paid the amount previously written off.

Instructions

Prepare the journal entries on December 31, 2008, May 11, 2009, and June 12, 2009.

Valuing Accounts Receivable

E9-6 Prepare the journal entries on December 31, 2008, May 11, 2009, and June 12, 2009.

December 31 (\$400,000 × 2% = 8,000)

Bad debt expense	8,000	
Allowance for doubtful accounts		8,000

Valuing Accounts Receivable

E9-6 Prepare the journal entries on December 31, 2008, May 11, 2009, and June 12, 2009.

May 11 (write-off)

Allowance for doubtful accounts	1,100	
Accounts receivable		1,100

June 12 (recovery)

Accounts receivable	1,100	
Allowance for doubtful accounts		1,100
Cash	1,100	
Accounts receivable		1,100

Valuing Accounts Receivable

Bases Used for Allowance Method

Illustration 9-5

Percentage of Sales

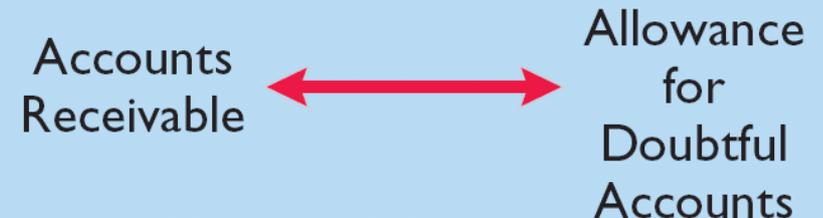
Matching



Emphasis on Income Statement Relationships

Percentage of Receivables

Cash Realizable Value



Emphasis on Balance Sheet Relationships

Valuing Accounts Receivable

Example Data

Credit sales	\$500,000
Estimated % of credit sales uncollectible	1.25%
Accounts receivable balance	\$72,500
Estimated % of A/R not collected	8%
Unadjusted balance in Allowance for Doubtful Accounts:	
Case 1	\$150 (credit balance)
Case 2	\$150 (debit balance)

Valuing Accounts Receivable

Percentage of Sales - disregards the existing balance in Allowance for Doubtful Accounts

Credit sales	\$500,000
Estimated percentage uncollectible	<u>1.25%</u>
Estimated bad debt expense	\$ 6,250

Journal entry:

Bad debt expense	6,250	
Allowance for doubtful accounts		6,250

Valuing Accounts Receivable

Percentage of Sales

	<u>Case 1</u>	<u>Case 2</u>
Actual balance (credit)	(150)	150
Estimated uncollectible	<u>(6,250)</u>	<u>(6,250)</u>
Ending balance	<u><u>(6,400)</u></u>	<u><u>(6,100)</u></u>

The Allowance for Doubtful Accounts has an ending balance of \$6,400 in Case 1 and \$6,100 in Case 2.

Valuing Accounts Receivable

Percentage of Receivables

Accounts receivable	\$ 72,500
Estimated percentage uncollectible	<u>x 8%</u>
Required balance in allowance account	<u>\$ 5,800</u>

What will be the amount of the adjusting entry?

Valuing Accounts Receivable

Percentage of Receivables

	<u>Case 1</u>	<u>Case 2</u>
Actual balance (credit)	(150)	150
Desired balance	<u>(5,800)</u>	<u>(5,800)</u>
Adjustment	<u>(5,650)</u>	<u>(5,950)</u>



Journal entry - Case 1:

Bad debt expense	5,650
Allowance for doubtful accounts	5,650

Valuing Accounts Receivable

Percentage of Receivables

	<u>Case 1</u>	<u>Case 2</u>
Actual balance (credit)	(150)	150
Desired balance	<u>(5,800)</u>	<u>(5,800)</u>
Adjustment	<u>(5,650)</u>	<u>(5,950)</u>
		
Journal entry - Case 2:		
Bad debt expense		5,950
Allowance for doubtful accounts		5,950

Valuing Accounts Receivable

When estimating losses using **Percentage of Receivables**, companies often prepare an **aging schedule**, which classifies customer balances by the length of time they have been unpaid.

Illustration 9-7

Customer	Total	Not Yet Due	Number of Days Past Due			
			1-30	31-60	61-90	Over 90
T. E. Adert	\$ 600		\$ 300		\$ 200	\$ 100
R. C. Bortz	300	\$ 300				
B. A. Carl	450		200	\$ 250		
O. L. Diker	700	500			200	
T. O. Ebbet	600			300		300
Others	36,950	26,200	5,200	2,450	1,600	1,500
	<u>\$39,600</u>	<u>\$27,000</u>	<u>\$5,700</u>	<u>\$3,000</u>	<u>\$2,000</u>	<u>\$1,900</u>
Estimated Percentage Uncollectible		2%	4%	10%	20%	40%
Total Estimated Bad Debts	<u>\$ 2,228</u>	<u>\$ 540</u>	<u>\$ 228</u>	<u>\$ 300</u>	<u>\$ 400</u>	<u>\$ 760</u>

Valuing Accounts Receivable

Summary

Percentage of Sales approach:

- Focus on "Bad debt expense" estimate, any balance in the allowance account is ignored.
- Method achieves a matching of cost and revenues.

Percentage of Receivables approach:

- Accurate valuation of receivables on the balance sheet.
- Method may also be applied using an aging schedule.

Disposing of Accounts Receivable

Companies sell receivables for two major reasons.

1. Receivables may be the only reasonable source of cash.
2. Billing and collection are often time-consuming and costly.

Disposing of Accounts Receivable

Sale of Receivables

A **factor** buys receivables from businesses and then collects the payments directly from the customers.

Typically the factor charges a commission to the company that is selling the receivables.

The fee ranges from 1-3% of the amount of receivables purchased.

Disposing of Accounts Receivable

E9-7 (a) On March 3, Cornwell Appliances sells \$680,000 of its receivables to Marsh Factors Inc. Marsh Factors assesses a finance charge of 3% of the amount of receivables sold. Prepare the entry on Cornwell Appliances' books to record the sale of the receivables.

$$(\$680,000 \times 3\% = \$20,400)$$

Cash	659,600	
Service charge expense	20,400	
Accounts receivable		680,000

Disposing of Accounts Receivable

Credit Card Sales

Retailer considers credit card sales the same as *cash sales*.

- Retailer must pay card issuer a fee of 2 to 4% for processing the transactions.
- Retailer records the sale in a similar manner as checks deposited from cash sale.

Disposing of Accounts Receivable

E9-7 (b) On May 10, Dale Company sold merchandise for \$3,500 and accepted the customer's America Bank MasterCard. America Bank charges a 4% service charge for credit card sales. Prepare the entry on Dale Company's books to record the sale of merchandise.

$$(\$3,500 \times 4\% = \$140)$$

Cash	3,360	
Service charge expense	140	
Sales		3,500

Notes Receivable

Companies may grant credit in exchange for a promissory note. A **promissory note** is a written promise to pay a specified amount of money on demand or at a definite time.

Promissory notes may be used:

1. when individuals and companies lend or borrow money,
2. when amount of transaction and credit period exceed normal limits, or
3. in settlement of accounts receivable.

Notes Receivable

To the **Payee**, the promissory note is a note receivable.
To the **Maker**, the promissory note is a note payable.

Illustration 9-10

The diagram shows a promissory note form with the following fields and labels:

- Amount:** \$1,000
- Date Due:** 2 months after date
- Date of Note:** Chicago, Illinois May 1, 2008
- Payee:** Wilma Company
- Amount:** One Thousand and no/100 dollars
- Interest Rate:** 12%
- Maker:** Calhoun Company
- Treasurer:** Phylis Miller

Notes Receivable

Determining the Maturity Date

Note expressed in terms of

- Months
- Days

Computing Interest

Illustration 9-13

$$\text{Face Value of Note} \times \text{Annual Interest Rate} \times \text{Time in Terms of One Year} = \text{Interest}$$

Recognizing Notes Receivable

E9-10 Orosco Supply Co. has the following transactions related to notes receivable during the last 2 months of 2008.

Nov. 1 Loaned \$15,000 cash to Sally Givens on a 1-year, 10% note.

Dec. 11 Sold goods to John Countryman, Inc., receiving a \$6,750, 90-day, 8% note.

Dec. 16 Received a \$4,000, 6-month, 9% note in exchange for Bob Reber's outstanding accounts receivable.

Dec. 31 Accrued interest revenue on all notes receivable.

Instructions

(a) Journalize the transactions for Orosco Supply Co.

Recognizing Notes Receivable

E9-10 Nov. 1 Loaned \$15,000 cash to Sally Givens on a 1-year, 10% note. Dec. 11 Sold goods to John Countryman, Inc., receiving a \$6,750, 90-day, 8% note. Dec. 16 Received a \$4,000, 6-month, 9% note in exchange for Bob Reber's outstanding accounts receivable.

Nov. 1	Notes receivable	15,000	
	Cash		15,000
Dec. 11	Notes receivable	6,750	
	Sales		6,750
Dec. 16	Notes receivable	4,000	
	Accounts receivable		4,000

Recognizing Notes Receivable

E9-10 Dec. 31 Accrued interest revenue on all notes receivable.

	<u>Amount</u>		<u>Rate</u>		<u>Time</u>		
Givens note:	\$ 15,000	x	10%	x	60 / 360	=	\$ 250
Countryman note:	6,750	x	8%	x	20 / 360	=	30
Reber note:	4,000	x	9%	x	15 / 360	=	<u>15</u>
							<u>\$ 295</u>
							Total accrued interest

Dec. 31	Interest receivable	295	
	Interest revenue		295

Notes Receivable

Valuing Notes Receivable

Like accounts receivable, companies report short-term notes receivable at their **cash (net) realizable value**.

Estimation of cash realizable value and bad debts expense are done similarly to accounts receivable.

Allowance for Doubtful Accounts is used.

Notes Receivable

Disposing of Notes Receivable

1. Notes may be held to their maturity date.
2. Maker may default and payee must make an adjustment to the account.
3. Holder speeds up conversion to cash by selling the note receivable.

Notes Receivable

Disposing of Notes Receivable

Honor of Notes Receivable

A note is **honored** when its maker pays it in full at its maturity date.

Dishonor of Notes Receivable

A **dishonored** note is not paid in full at maturity.

A dishonored note receivable is no longer negotiable.

Notes Receivable

E9-13 On May 2, Kleinsorge Company lends \$7,600 to Everhart, Inc., issuing a 6-month, 9% note. At the maturity date, November 2, Everhart indicates that it cannot pay.

Instructions

- (a) Prepare the entry to record the issuance of the note.
- (b) Prepare the entry to record the dishonor of the note, assuming that Kleinsorge Company expects collection will occur.
- (c) Prepare the entry to record the dishonor of the note, assuming that Kleinsorge Company does not expect collection in the future.

Notes Receivable

E9-13 (a) Prepare the entry to record the issuance of the note. (b) Prepare the entry to record the dishonor of the note, assuming that Kleinsorge Company expects collection will occur.

(a)	Notes receivable	7,600	
	Cash		7,600

(b) Interest = $\$7,600 \times 9\% \times 6/12 = \342

	Accounts receivable	7,942	
	Notes receivable		7,600
	Interest revenue		342

Notes Receivable

E9-13 (c) Prepare the entry to record the dishonor of the note, assuming that Kleinsorge Company does not expect collection in the future.

(c)	Allowance for doubtful accounts	7,600	
	Notes receivable		7,600

When there is no hope of collection, the note holder would **write off** the face value of the note. No interest revenue would be recorded because collection will not occur.

Statement Presentation and Analysis

Presentation

- B/S** {
- Identify in the balance sheet or in the notes, each major type of receivable.
 - Report short-term receivables as current assets.
 - Report both gross amount of receivables and allowance for doubtful account.
- I/S** {
- Report bad debts expense and service charge expense as selling expenses.
 - Report interest revenue under "Other revenues and gains."

Statement Presentation and Analysis

Analysis of Receivables

Illustration 9-15

$$\begin{array}{rclcl} \text{Net Credit Sales} & \div & \text{Average Net} & = & \text{Accounts Receivable} \\ & & \text{Accounts Receivable} & & \text{Turnover} \\ \$24,801 & \div & \frac{\$1,825 + \$2,216}{2} & = & 12.3 \text{ times} \end{array}$$

This Ratio used to:

- Assess the liquidity of the receivables.
- Measure the number of times, on average, a company collects receivables during the period.

Statement Presentation and Analysis

Analysis of Receivables

Illustration 9-16

$$\begin{array}{rclcl} \text{Days in Year} & \div & \text{Accounts Receivable} & = & \text{Average Collection} \\ & & \text{Turnover} & & \text{Period in Days} \\ 365 \text{ days} & \div & 12.3 \text{ times} & = & 29.7 \text{ days} \end{array}$$

Variant of the accounts receivable turnover ratio is **average collection period** in terms of days.

- Used to assess effectiveness of credit and collection policies.
- Collection period should not exceed credit term period.

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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 10

PLANT ASSETS, NATURAL RESOURCES, AND INTANGIBLE ASSETS

Accounting Principles, Eighth Edition

Study Objectives

1. Describe how the cost principle applies to plant assets.
2. Explain the concept of depreciation.
3. Compute periodic depreciation using different methods.
4. Describe the procedure for revising periodic depreciation.
5. Distinguish between revenue and capital expenditures, and explain the entries for each.
6. Explain how to account for the disposal of a plant asset.
7. Compute periodic depletion of natural resources.
8. Explain the basic issues related to accounting for intangible assets.
9. Indicate how plant assets, natural resources, and intangible assets are reported.

Plant Assets, Natural Resources, and Intangible Assets

Plant Assets

- Determining the cost of plant assets
- Depreciation
- Expenditures during useful life
- Plant asset disposals

Natural Resources

- Depletion

Intangible Assets

- Accounting for intangibles
- Research and development costs

Statement Presentation and Analysis

- Presentation
- Analysis

Section 1 - Plant Assets

Plant assets include land, land improvements, buildings, and equipment (machinery, furniture, tools).

Major characteristics include:

- “Used in operations” and not for resale.
- Long-term in nature and usually depreciated.
- Possess physical substance.

Referred to as property, plant, and equipment; plant and equipment; and fixed assets.

Determining the Cost of Plant Assets

Land

Includes all costs to acquire land and ready it for use.

Costs typically include:

- (1) the purchase price;
- (2) closing costs, such as title and attorney's fees;
- (3) real estate brokers' commissions;
- (4) costs of grading, filling, draining, and clearing;
- (5) assumption of any liens, mortgages, or encumbrances on the property.

Determining the Cost of Plant Assets

E10-3 On March 1, 2008, Penner Company acquired real estate on which it planned to construct a small office building. The company paid \$80,000 in cash. An old warehouse on the property was razed at a cost of \$8,600; the salvaged materials were sold for \$1,700. Additional expenditures before construction began included \$1,100 attorney's fee for work concerning the land purchase, \$5,000 real estate broker's fee, \$7,800 architect's fee, and \$14,000 to put in driveways and a parking lot.

Instructions

Determine amount to be reported as the cost of the land. For each cost not used, indicate the account debited.

Determining the Cost of Plant Assets

Land Improvements

Includes all expenditures necessary to make the improvements ready for their intended use.

- Examples are driveways, parking lots, fences, landscaping, and underground sprinklers.
- Limited useful lives.
- Expense (depreciate) the cost of land improvements over their useful lives.

Determining the Cost of Plant Assets

Buildings

Includes all costs related directly to purchase or construction.

Purchase costs:

- Purchase price, closing costs (attorney's fees, title insurance, etc.) and real estate broker's commission.
- Remodeling and replacing or repairing the roof, floors, electrical wiring, and plumbing.

Construction costs:

- Contract price plus payments for architects' fees, building permits, and excavation costs.

Determining the Cost of Plant Assets

E10-3 Determine amount to be reported as the cost of the land.

Company paid \$80,000 in cash.

Old warehouse razed at a cost of \$8,600

Salvaged materials were sold for \$1,700.

Expenditures before construction began:

\$1,100 attorney's fee for work on land purchase.

\$5,000 real estate broker's fee.

\$7,800 architect's fee.

\$14,000 for driveways and parking lot.

Land

\$80,000

8,600

- 1,700

1,100

5,000

0

0

Total

\$93,000

Building

Land Improvements

Determining the Cost of Plant Assets

Equipment

Include all costs incurred in acquiring the equipment and preparing it for use.

Costs typically include:

- purchase price,
- sales taxes,
- freight and handling charges,
- insurance on the equipment while in transit,
- assembling and installation costs, and
- costs of conducting trial runs.

Depreciation

Depreciation is the 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.

- Process of cost allocation, not asset valuation.
- Applies to land improvements, buildings, and equipment, not land.
- Depreciable, because the revenue-producing ability of asset will decline over the asset's useful life.

Depreciation

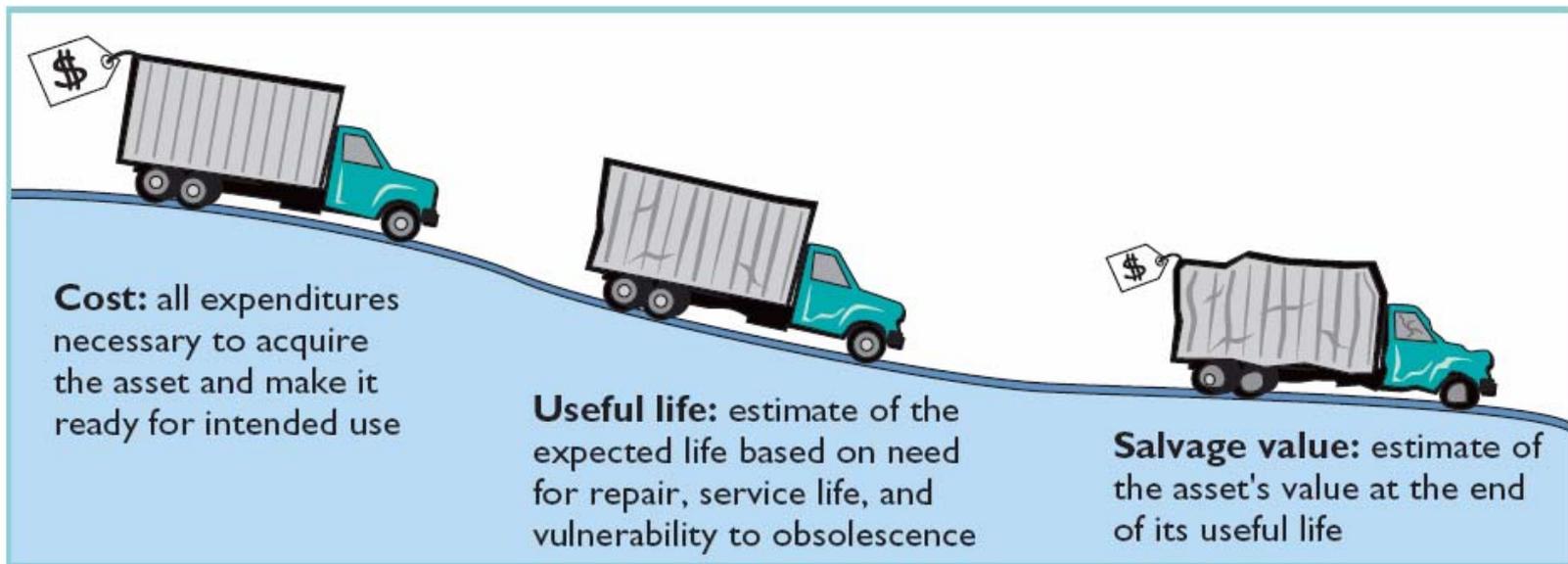
Factors in Computing Depreciation

Illustration 10-6

Cost

Useful Life

Salvage Value



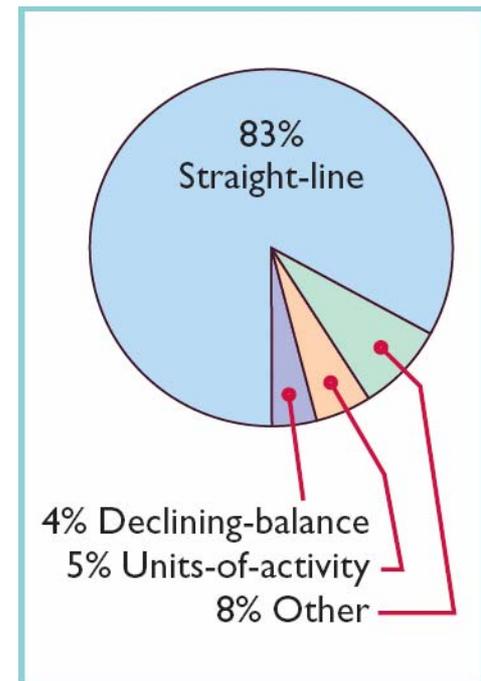
Depreciation

Depreciation Methods

Objective is to select the method that best measures an asset's contribution to revenue over its useful life. Examples include:

- (1) Straight-line method.
- (2) Units-of-Activity method.
- (3) Declining-balance method.

Illustration 10-8
Use of depreciation methods in 600 large U.S. companies



Depreciation

Exercise (Depreciation Computations—Three Methods)

Parish Corporation purchased a new machine for its assembly process on January 2, 2008. The cost of this machine was \$117,900. The company estimated that the machine would have a salvage value of \$12,900 at the end of its service life. Its life is estimated at 5 years and its working hours are estimated at 1,000 hours. Year-end is December 31.

Instructions: Compute the depreciation expense under the following methods.

- (a) Straight-Line.
- (b) Units-of-Activity.
- (c) Declining Balance.

Depreciation

Straight-Line

- Expense is same amount for each year.
- Depreciable cost is cost of the asset less its salvage value.
- Straight-line method predominates in practice.

Depreciation

Exercise (Straight-Line Method)

Year	Depreciable Cost		Years	=	Annual Expense	Accum. Deprec.
2008	\$ 105,000	/	5	=	\$ 21,000	\$ 21,000
2009	105,000	/	5	=	21,000	42,000
2010	105,000	/	5	=	21,000	63,000
2011	105,000	/	5	=	21,000	84,000
2012	105,000	/	5	=	21,000	105,000
					<u>\$ 105,000</u>	

2008 Journal
Entry

Depreciation expense	21,000	
Accumulated depreciation		21,000

Depreciation

Units-of-Activity

- Expense varies based on units of activity.
- Depreciable cost is cost less salvage value.
- Companies estimate total units of activity to calculate depreciation cost per unit.

Depreciation

Exercise (Units-of-Activity Method)

(\$105,000 / 1,000 hours = \$105 per hour)

Year	Hours Used		Rate per Hour		Annual Expense	Accum. Deprec.
2008	200	x	\$105	=	\$ 21,000	\$ 21,000
2009	150	x	105	=	15,750	36,750
2010	250	x	105	=	26,250	63,000
2011	300	x	105	=	31,500	94,500
2012	100	x	105	=	10,500	105,000
	<u>1,000</u>				<u>\$ 105,000</u>	

2008 Journal Entry

Depreciation expense

21,000

Accumulated depreciation

21,000

LO 3 Compute periodic depreciation using different methods.

Depreciation

Declining-Balance

- Decreasing annual depreciation expense over the asset's useful life.
- Declining-balance rate is double the straight-line rate.
- Rate applied to book value (cost less accumulated depreciation).

Depreciation

Exercise (Declining-Balance Method)

Year	Beginning Book value	Declining Balance Rate			Annual Expense	Accum. Deprec.
2008	\$ 117,900	x	40%	=	\$ 47,160	\$ 47,160
2009	70,740	x	40%	=	28,296	75,456
2010	42,444	x	40%	=	16,978	92,434
2011	25,466	x	40%	=	10,186	102,620
2012	15,280	x	40%	=	2,380	105,000
					<u>\$ 105,000</u>	


Plug

2008 Journal
Entry

Depreciation expense	47,160	
Accumulated depreciation		47,160

Depreciation

Comparison of Depreciation Methods

Year	SL	DB	Activity
2008	21,000	47,160	21,000
2009	21,000	28,296	15,750
2010	21,000	16,978	26,250
2011	21,000	10,186	31,500
2012	21,000	2,380	10,500
	<u>105,000</u>	<u>105,000</u>	<u>105,000</u>

Depreciation for Partial Year

The following additional slides are included to illustrate the calculation of partial-year depreciation expense.

The amounts are consistent with the previous slides illustrating the calculation of depreciation expense.

Depreciation for Partial Year

Exercise (Depreciation Computations—Three Methods)

Parish Corporation purchased a new machine for its assembly process on October 1, 2008. The cost of this machine was \$117,900. The company estimated that the machine would have a salvage value of \$12,900 at the end of its service life. Its life is estimated at 5 years and its working hours are estimated at 1,000 hours. During 2008, the machine was used 30 hours. Year-end is December 31.

Instructions: Compute the depreciation expense under the following methods.

- (a) Straight-Line.
- (b) Units-of-Activity.
- (c) Declining-Balance.

Depreciation for Partial Year

Exercise (Straight-line Method)

Year	Depreciable Base		Years		Annual Expense		Partial Year		Current Year Expense	Accum. Deprec.
2008	\$ 105,000	/	5	=	\$ 21,000	x	3/12	=	\$ 5,250	\$ 5,250
2009	105,000	/	5	=	21,000				21,000	26,250
2010	105,000	/	5	=	21,000				21,000	47,250
2011	105,000	/	5	=	21,000				21,000	68,250
2012	105,000	/	5	=	21,000				21,000	89,250
2013	105,000	/	5	=	21,000	x	9/12	=	15,750	105,000
									<u>\$ 105,000</u>	

Journal entry:

2008	Depreciation expense	5,250
	Accumulated depreciation	5,250

Depreciation for Partial Year

Exercise (Units-of-Activity Method)

(\$105,000 / 1,000 hours = \$105 per hour)

Year	(Given) Hours Used		Rate per Hours		Annual Expense	Current Year Expense	Accum. Deprec.
2008	30	x	\$105	=	\$ 3,150	\$ 3,150	\$ 3,150
2009	150	x	105	=	15,750	15,750	18,900
2010	250	x	105	=	26,250	26,250	45,150
2011	300	x	105	=	31,500	31,500	76,650
2012	100	x	105	=	10,500	10,500	87,150
2013	170	x	105	=	17,850	\$ 17,850	105,000
	1,000				\$105,000	\$ 105,000	

Journal entry:

2008	Depreciation expense	3,150
	Accumulated depreciation	3,150

Depreciation for Partial Year

Exercise (Declining-Balance Method)

Year	Depreciable Base		Declining Balance Rate	=	Annual Expense	x	Partial Year	=	Current Year Expense	Accum. Deprec.
2008	\$117,900	x	40%	=	\$47,160	x	3/12	=	\$ 11,790	\$ 11,790
2009	106,110	x	40%	=	42,444				42,444	54,234
2010	63,666	x	40%	=	25,466				25,466	79,700
2011	38,200	x	40%	=	15,280				15,280	94,980
2012	22,920	x	40%	=	9,168				9,168	104,148
2013	13,752	x	40%	=	852				852	105,000
							Plug	→	<u>852</u>	
									<u><u>\$105,000</u></u>	

Journal entry:

2008	Depreciation expense	11,790
	Accumulated depreciation	11,790

Depreciation

Depreciation and Income Taxes

IRS does not require taxpayer to use the same depreciation method on the tax return that is used in preparing financial statements.

IRS requires the *Modified Accelerated Cost Recovery System*, which is NOT acceptable under GAAP.

Depreciation

Revising Periodic Depreciation

- Accounted for in the period of change and future periods (*Change in Estimate*).
- Not handled retrospectively.
- Not considered error.

Depreciation

Arcadia HS purchased equipment for \$510,000 which was estimated to have a useful life of 10 years with a salvage value of \$10,000 at the end of that time. Depreciation has been recorded for 7 years on a straight-line basis. In 2008 (year 8), it is determined that the total estimated life should be 15 years with a salvage value of \$5,000 at the end of that time.

Questions:

- What is the journal entry to correct the prior years' depreciation?
- Calculate the depreciation expense for 2008.

**No Entry
Required**



Depreciation

After 7 years

Equipment cost	\$510,000
Salvage value	- 10,000
Depreciable cost	<u>\$500,000</u>
Useful life (original)	/ 10 years
Annual depreciation	<u><u>\$ 50,000</u></u>

First, establish BV at date of change in estimate.

$$\times 7 \text{ years} = \$350,000$$

<u>Balance Sheet</u> (Dec. 31, 2007)	
Fixed Assets:	
Equipment	\$510,000
Accumulated depreciation	- 350,000
Book value (BV)	<u><u>\$160,000</u></u>

Depreciation

After 7 years

Book value	\$160,000
Salvage value (new)	- 5,000
Depreciable cost	<u>\$155,000</u>
Useful life remaining	<u>/ 8 years</u>
Annual depreciation	<u><u>\$ 19,375</u></u>

Depreciation
Expense calculation
for 2008.

Journal entry for 2008

Depreciation expense	19,375	
Accumulated depreciation		19,375

Expenditures During Useful Life

Ordinary Repairs - expenditures to maintain the operating efficiency and productive life of the unit.

- Debit - Repair (or Maintenance) Expense.
- Referred to as **revenue expenditures**.

Additions and Improvements - costs incurred to increase the operating efficiency, productive capacity, or useful life of a plant asset.

- Debit - the plant asset affected.
- Referred to as **capital expenditures**.

Plant Asset Disposals

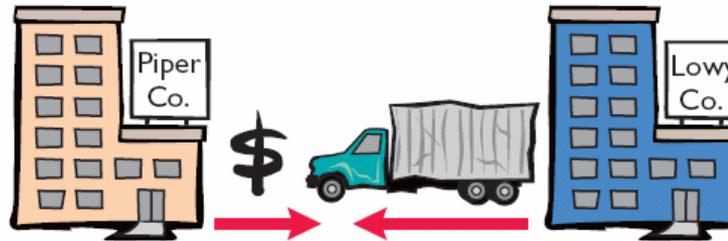
Companies dispose of plant assets in three ways — Retirement, Sale, or Exchange (appendix).

Illustration 10-18



Retirement

Equipment is scrapped or discarded.



Sale

Equipment is sold to another party.

Record depreciation up to the date of disposal.

Eliminate asset by (1) debiting Accumulated Depreciation, and (2) crediting the asset account.

Plant Asset Disposals - Retirement

BE10-9 Prepare journal entries to record the following.

(a) Gomez Company retires its delivery equipment, which cost \$41,000. Accumulated depreciation is also \$41,000 on this delivery equipment. No salvage value is received.

(b) Assume the same information as (a), except that accumulated depreciation for Gomez Company is \$39,000, instead of \$41,000.

(a)	Accumulated depreciation	41,000	
	Equipment		41,000

Plant Asset Disposals - Retirement

BE10-9 Prepare journal entries to record the following.

(a) Gomez Company retires its delivery equipment, which cost \$41,000. Accumulated depreciation is also \$41,000 on this delivery equipment. No salvage value is received.

(b) Assume the same information as (a), except that accumulated depreciation for Gomez Company is \$39,000, instead of \$41,000.

(b)	Accumulated depreciation	39,000	
	Loss on disposal	2,000	
	Equipment		41,000

Plant Asset Disposals

Sale of Plant Assets

Compare the book value of the asset with the proceeds received from the sale.

- If proceeds **exceed** the book value, a **gain** on disposal occurs.
- If proceeds **are less than** the book value, a **loss** on disposal occurs.

Plant Asset Disposals - Sale

BE10-10 Chan Company sells office equipment on September 30, 2008, for \$20,000 cash. The office equipment originally cost \$72,000 and as of January 1, 2008, had accumulated depreciation of \$42,000. Depreciation for the first 9 months of 2008 is \$5,250. Prepare the journal entries to (a) update depreciation to September 30, 2008, and (b) record the sale of the equipment.

Plant Asset Disposals - Sale

BE10-10 Prepare the journal entries to (a) update depreciation to September 30, 2008, and (b) record the sale of the equipment.

(a)	Depreciation expense	5,250	
	Accumulated depreciation		5,250
(b)	Cash	20,000	
	Accumulated depreciation	47,250	
	Loss on disposal	4,750	
	Office equipment		72,000

Section 2 - Natural Resources

Natural resources consist of standing timber and underground deposits of oil, gas, and minerals.

Distinguishing characteristics:

- Physically extracted in operations.
- Replaceable only by an act of nature.

Section 2 - Natural Resources

Cost - price needed to acquire the resource and prepare it for its intended use.

Depletion - allocation of the cost to expense in a rational and systematic manner over the resource's useful life.

- **Depletion** is to natural resources as **depreciation** is to plant assets.
- Companies generally use units-of-activity method.
- Depletion generally is a function of the **units extracted**.

Section 2 - Natural Resources

BE10-11 Olpe Mining Co. purchased for \$7 million a mine that is estimated to have 35 million tons of ore and no salvage value. In the first year, 6 million tons of ore are extracted and sold. (a) Prepare the journal entry to record depletion expense for the first year. (b) Show how this mine is reported on the balance sheet at the end of the first year.

$$\begin{aligned}\text{Depletion cost per unit} &= \$7,000,000 \div 35,000,000 \\ &= \$.20 \text{ depletion cost per ton}\end{aligned}$$

$$$.20 \times 6,000,000 = \$1,200,000$$

Section 2 - Natural Resources

BE10-11 (a) Prepare the journal entry to record depletion expense for the first year. (b) Show how this mine is reported on the balance sheet at the end of the first year.

(a) Depletion expense	1,200,000	
Accumulated depletion		1,200,000

(b) Balance Sheet Presentation

Ore mine	7,000,000	
Less: Accum. depletion	<u>1,200,000</u>	5,800,000

Section 3 - Intangible Assets

Intangible assets are rights, privileges, and competitive advantages that do not possess physical substance.

Intangible assets are categorized as having either a limited life or an indefinite life.

Common types of intangibles:

- Patents
- Copyrights
- Franchises or licenses
- Trademarks or trade names
- Goodwill

Accounting for Intangible Assets

Valuation

Purchased Intangibles:

- Recorded at cost.
- Includes all costs necessary to make the intangible asset ready for its intended use.

Internally Created Intangibles:

- Generally expensed.
- Only capitalize direct costs incurred in perfecting title to the intangible, such as legal costs.

Accounting for Intangible Assets

Amortization of Intangibles

Limited-Life Intangibles:

- Amortize to expense.
- Credit asset account or accumulated amortization.

Indefinite-Life Intangibles:

- No foreseeable limit on time the asset is expected to provide cash flows.
- No amortization.

Accounting for Intangible Assets

Patents

- Exclusive right to manufacture, sell, or otherwise control an invention for a period of 20 years from the date of the grant.
- Capitalize costs of purchasing a patent and amortize over its 20-year life or its useful life, whichever is shorter.
- Expense any R&D costs in developing a patent.
- Legal fees incurred successfully defending a patent are capitalized to Patent account.

Accounting for Intangible Assets

BE10-11 Galena Company purchases a patent for \$120,000 on January 2, 2008. Its estimated useful life is 10 years. (a) Prepare the journal entry to record patent expense for the first year. (b) Show how this patent is reported on the balance sheet at the end of the first year.

(a)	Amortization expense	12,000	
	Patent		12,000

(b) Balance Sheet Presentation

Intangible assets:

Patent	108,000
--------	---------

Accounting for Intangible Assets

Copyrights

- Give the owner the exclusive right to reproduce and sell an artistic or published work.
 - plays, literary works, musical works, pictures, photographs, and video and audiovisual material.
- **Copyright** is granted for the life of the creator plus 70 years.
- Capitalize acquisition costs.
- Amortized to expense over useful life.

Accounting for Intangible Assets

Trademarks and Trade Names

- Word, phrase, jingle, or symbol that identifies a particular enterprise or product.
 - Wheaties, Game Boy, Frappuccino, Kleenex, Windows, Coca-Cola, and Jeep.
- **Trademark** or **trade name** has legal protection for indefinite number of 10 year renewal periods.
- Capitalize acquisition costs.
- No amortization.

Accounting for Intangible Assets

Franchises and Licenses

- Contractual arrangement between a franchisor and a franchisee.
 - Shell, Taco Bell, or Rent-A-Wreck are franchises.
- **Franchise** (or **license**) with a limited life should be amortized to expense over the life of the franchise.
- Franchise with an indefinite life should be carried at cost and not amortized.

Accounting for Intangible Assets

Goodwill

Includes exceptional management, desirable location, good customer relations, skilled employees, high-quality products, etc.

Only recorded when an entire business is purchased.

Goodwill is recorded as the excess of ...

*purchase price **over** the FMV of the identifiable net assets acquired.*

Internally created goodwill should not be capitalized.

Research and Development Costs

Frequently results in something that a company patents or copyrights such as:

- new product,
- process,
- idea,
- formula,
- composition, or
- literary work.

All R & D costs are **expensed when incurred**.

Statement Presentation and Analysis

Presentation

Illustration 10-24



OWENS-ILLINOIS, INC.

Balance Sheet (partial)
(in millions)

Property, plant, and equipment			
Timberlands, at cost, less accumulated depletion		\$ 95.4	
Buildings and equipment, at cost	\$2,207.1		
Less: Accumulated depreciation	<u>1,229.0</u>	<u>978.1</u>	
Total property, plant, and equipment			\$1,073.5
Intangibles			
Patents			<u>410.0</u>
Total			<u>\$1,483.5</u>

Companies usually include natural resources under "Property, plant, and equipment" and show intangibles separately.

Statement Presentation and Analysis

Analysis

Illustration 10-25

$$\begin{array}{rclcl} \text{Net Sales} & \div & \text{Average Total} & = & \text{Asset Turnover} \\ & & \text{Assets} & & \text{Ratio} \\ \$56,741 & \div & \frac{\$61,527 + \$57,048}{2} & = & .96 \text{ times} \end{array}$$

Each dollar invested in assets produced \$0.96 in sales. If a company is using its assets efficiently, each dollar of assets will create a high amount of sales.

Exchange of Plant Assets

- Ordinarily, companies record a gain or loss on the exchange of plant assets.
- The rationale for recognizing a gain or loss is that most exchanges have **commercial substance**.
- An exchange has **commercial substance** if the future cash flows change as a result of the exchange.

Exchange of Plant Assets - Loss Treatment

Assume Roland Company exchanged a set of used trucks plus cash for a new semi-truck. The used trucks have a combined book value of \$42,000 (cost of \$64,000 and accumulated depreciation of \$22,000). The used trucks have a fair market value of \$26,000. Roland must pay \$17,000 for the semi-truck.

Compute the loss on the exchange.

Book value of used trucks	\$42,000
Fair market value of used trucks	<u>26,000</u>
Loss on exchange	\$16,000

Exchange of Plant Assets - Loss Treatment

Assume Roland Company exchanged a set of used trucks plus cash for a new semi-truck. The used trucks have a combined book value of \$42,000 (cost of \$64,000 and accumulated depreciation of \$22,000). The used trucks have a fair market value of \$26,000. Roland must pay \$17,000 for the semi-truck.

Prepare the journal entry to record the exchange.

Semi truck	43,000	
Accumulated depreciation	22,000	
Loss on disposal	16,000	
Used trucks		64,000
Cash		17,000

Exchange of Plant Assets - Gain Treatment

Assume Mark Express Delivery decides to exchange its old delivery equipment plus cash of \$3,000 for new delivery equipment. The book value of the old delivery equipment is \$12,000 (cost \$40,000 less accumulated depreciation of \$28,000), and the fair market value of the old equipment is \$19,000.

Compute the gain on the exchange.

Fair market value of old equipment	\$19,000
Book value of old equipment	<u>12,000</u>
Gain on exchange	\$ 7,000

Exchange of Plant Assets - Gain Treatment

Assume Mark Express Delivery decides to exchange its old delivery equipment plus cash of \$3,000 for new delivery equipment. The book value of the old delivery equipment is \$12,000 (cost \$40,000 less accumulated depreciation of \$28,000), and the fair market value of the old equipment is \$19,000.

Prepare the journal entry to record the exchange.

Delivery equipment	22,000	
Accumulated depreciation	28,000	
Delivery equipment		40,000
Gain on disposal		7,000
Cash		3,000

Copyright

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 11

CURRENT LIABILITIES AND PAYROLL ACCOUNTING

Accounting Principles, Eighth Edition

Study Objectives

1. Explain a current liability, and identify the major types of current liabilities.
2. Describe the accounting for notes payable.
3. Explain the accounting for other current liabilities.
4. Explain the financial statement presentation and analysis of current liabilities.
5. Describe the accounting and disclosure requirements for contingent liabilities.
6. Compute and record the payroll for a pay period.
7. Describe and record employer payroll taxes.
8. Discuss the objectives of internal control for payroll.

Current Liabilities and Payroll Accounting

Accounting for Current Liabilities

- Notes payable
- Sales taxes payable
- Unearned revenues
- Current maturities of long-term debt
- Statement presentation and analysis

Contingent Liabilities

- Recording
- Disclosure

Payroll Accounting

- Determining payroll
- Recording payroll
- Employer payroll taxes
- Filing and remitting payroll taxes
- Internal control for payroll

Accounting for Current Liabilities

Current liability is debt with two key features:

1. Company expects to pay the debt from existing current assets or through the creation of other current liabilities.
2. Company will pay the debt within one year or the operating cycle, whichever is longer.

Current liabilities include **notes payable**, **accounts payable**, **unearned revenues**, and accrued liabilities such as **taxes payable**, **salaries payable**, and **interest payable**.

Accounting for Current Liabilities

Question

To be classified as a current liability, a debt must be expected to be paid:

- a. out of existing current assets.
- b. by creating other current liabilities.
- c. within 2 years.
- d. both (a) and (b).

Accounting for Current Liabilities

Notes Payable

- Written promissory note.
- Require the borrower to pay interest.
- Issued for varying periods.

Accounting for Current Liabilities

E11-2 On June 1, Melendez Company borrows \$90,000 from First Bank on a 6-month, \$90,000, 12% note.

Instructions

- a) Prepare the entry on June 1.
- b) Prepare the adjusting entry on June 30.
- c) Prepare the entry at maturity (December 1), assuming monthly adjusting entries have been made through November 30.
- d) What was the total financing cost (interest expense)?

Accounting for Current Liabilities

E11-2 On June 1, Melendez Company borrows \$90,000 from First Bank on a 6-month, \$90,000, 12% note.

a) Prepare the entry on June 1.

Cash	90,000	
Notes payable		90,000

b) Prepare the adjusting entry on June 30.

$$\$90,000 \times 12\% \times 1/12 = \$900$$

Interest expense	900	
Interest payable		900

Accounting for Current Liabilities

E11-2 On June 1, Melendez Company borrows \$90,000 from First Bank on a 6-month, \$90,000, 12% note.

c) Prepare the entry at maturity (December 1), assuming monthly adjusting entries have been made through November 30.

Notes payable	90,000	
Interest payable	5,400	
Cash		95,400

d) What was the total financing cost (interest expense)?

\$5,400

Accounting for Current Liabilities

Sales Tax Payable

- Sales taxes are expressed as a stated percentage of the sales price.
- Either rung up separately or included in total receipts.
- Retailer collects tax from the customer.
- Retailer remits the collections to the state's department of revenue.

Accounting for Current Liabilities

E11-3 In providing accounting services to small businesses, you encounter the following situations pertaining to cash sales.

1. Warkentine Company rings up sales and sales taxes separately on its cash register. On April 10, the register totals are sales \$30,000 and sales taxes \$1,500.
2. Rivera Company does not segregate sales and sales taxes. Its register total for April 15 is \$23,540, which includes a 7% sales tax.

Instructions: Prepare the entry to record the sales transactions and related taxes for each client.

Accounting for Current Liabilities

E11-3 1. Warkentine Company rings up sales and sales taxes separately on its cash register. On April 10, the register totals are sales \$30,000 and sales taxes \$1,500.

Cash	31,500	
Sales		30,000
Sales tax payable		1,500

Accounting for Current Liabilities

E11-3 2. Rivera Company does not segregate sales and sales taxes. Its register total for April 15 is \$23,540, which includes a 7% sales tax.

$$\$23,540 / 1.07 = \$22,000$$

Cash	23,540	
Sales		22,000
Sales tax payable		1,540

Accounting for Current Liabilities

Unearned Revenue

Revenues that are received before the company delivers goods or provides services.

1. Company debits Cash, and credits a current liability account (unearned revenue).
2. When the company earns the revenue, it debits the Unearned Revenue account, and credits a revenue account.

Type of Business

Airline

Magazine publisher

Hotel

Insurance company

Accounting for Current Liabilities

E11-4 Guyer Company publishes a monthly sports magazine, *Fishing Preview*. Subscriptions to the magazine cost \$20 per year. During November 2008, Guyer sells 12,000 subscriptions beginning with the December issue. Guyer prepares financial statements quarterly and recognizes subscription revenue earned at the end of the quarter. The company uses the accounts Unearned Subscriptions and Subscription Revenue.

Instructions: (a) Prepare the entry in November for the receipt of the subscriptions. (b) Prepare the adjusting entry at December 31, 2008. (c) Prepare the adjusting entry at March 31, 2009.

Accounting for Current Liabilities

E11-4 (a) Prepare the entry in November for the receipt of the subscriptions. (b) Prepare the adjusting entry at December 31, 2008. (c) Prepare the adjusting entry at March 31, 2009.

Nov. 30	Cash (12,000 × \$20)	240,000	
	Unearned subscriptions		240,000
Dec. 31	Unearned subscriptions	20,000	
1 month	Subscriptions revenue		20,000
Mar. 31	Unearned subscriptions	60,000	
3 months	Subscriptions revenue		60,000

Accounting for Current Liabilities

Current Maturities of Long-Term Debt

- Portion of long-term debt that comes due in the current year.
- No adjusting entry required.

Accounting for Current Liabilities

Statement Presentation and Analysis

Illustration 11-3

Liabilities and Stockholders' Equity

Current liabilities

Short-term borrowings (notes payable)	\$ 4,157
Accounts payable	3,990
Accrued expenses	1,847
Accrued wages, salaries, and employee benefits	1,730
Customer advances	555
Dividends payable	141
Deferred and current income taxes payable	259
Long-term debt due within one year	3,531
Total current liabilities	16,210

Accounting for Current Liabilities

Question

Working capital is calculated as:

- a. current assets minus current liabilities.
- b. total assets minus total liabilities.
- c. long-term liabilities minus current liabilities.
- d. both (b) and (c).

Accounting for Current Liabilities

Statement Presentation and Analysis

Illustration 11-4

$$\begin{array}{r r r r} \text{Current} & & \text{Current} & \\ \text{Assets} & - & \text{Liabilities} & = \\ \$20,856 & - & \$16,210 & = \end{array} \quad \begin{array}{l} \text{Working} \\ \text{Capital} \\ \\ \$4,646 \end{array}$$

Liquidity refers to the ability to pay maturing obligations and meet unexpected needs for cash.

The **current ratio** permits us to compare the liquidity of different-sized companies and of a single company at different times.

$$\begin{array}{r r r r} \text{Current} & & \text{Current} & \\ \text{Assets} & \div & \text{Liabilities} & = \\ \$20,856 & \div & \$16,210 & = \end{array} \quad \begin{array}{l} \text{Current} \\ \text{Ratio} \\ \\ 1.29:1 \end{array}$$

Illustration 11-5

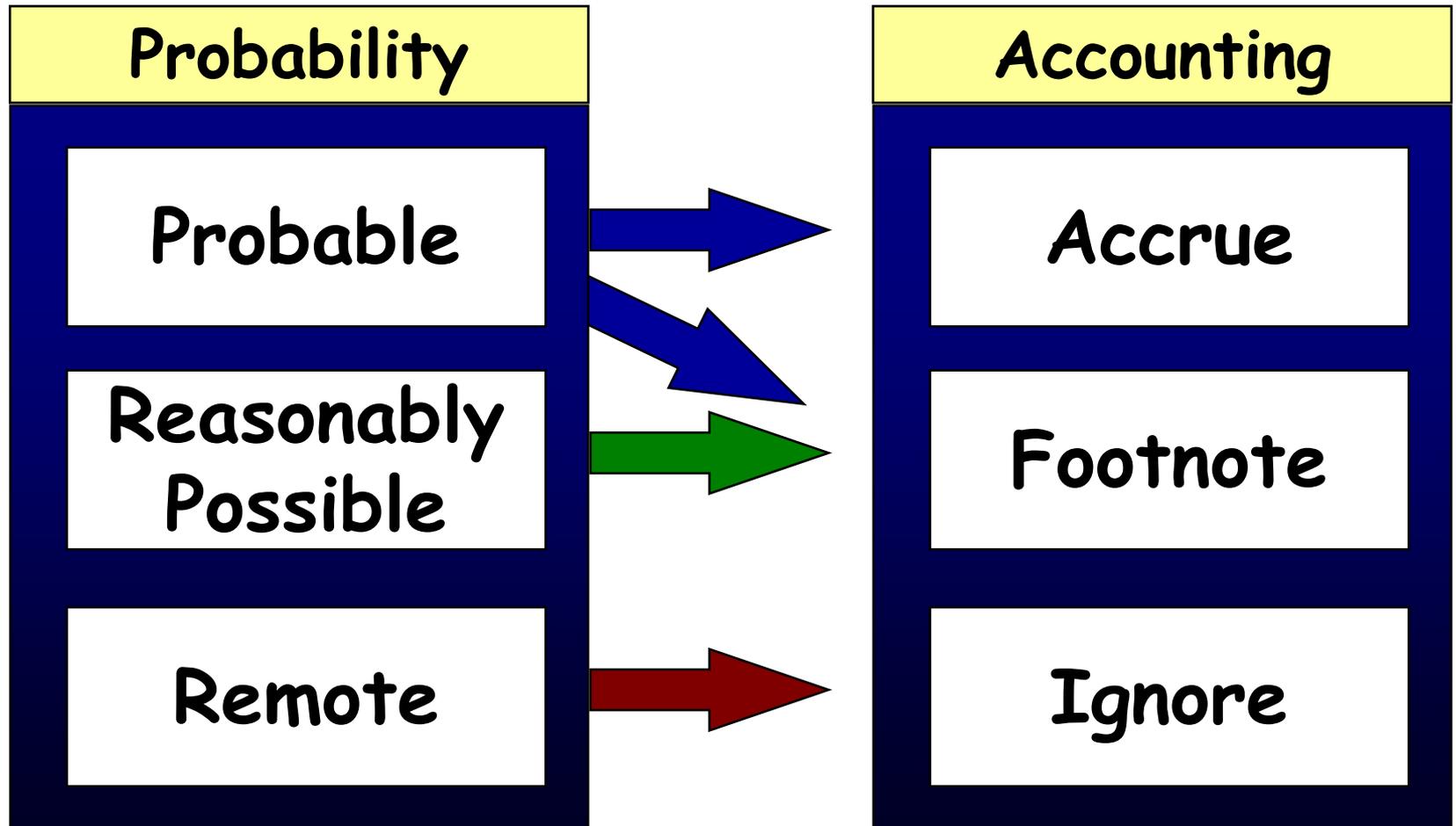
Contingent Liabilities

The likelihood that the future event will confirm the incurrence of a liability can range from probable to remote.

FASB uses three areas of probability:

- Probable.
- Reasonably possible.
- Remote.

Contingent Liabilities



Contingent Liabilities

Question

A contingent liability should be recorded in the accounts when:

- a. it is probable the contingency will happen, but the amount cannot be reasonably estimated.
- b. it is reasonably possible the contingency will happen, and the amount can be reasonably estimated.
- c.** it is probable the contingency will happen, and the amount can be reasonably estimated.
- d. it is reasonably possible the contingency will happen, but the amount cannot be reasonably estimated.

Contingent Liabilities

Recording a Contingent Liability

Product Warranties

Promise made by a seller to a buyer to make good on a deficiency of quantity, quality, or performance in a product.

Estimated cost of honoring product warranty contracts should be recognized as an expense in the period in which the sale occurs.

Contingent Liabilities

BE11-6 On December 1, Diaz Company introduces a new product that includes a one-year warranty on parts. In December, 1,000 units are sold. Management believes that 5% of the units will be defective and that the average warranty costs will be \$80 per unit. Prepare the adjusting entry at December 31 to accrue the estimated warranty cost.

$$1,000 \text{ units} \times 5\% \times \$80 = \$4,000$$

Dec. 31	Warranty expense	4,000	
	Warranty liability		4,000

Payroll Accounting

The term "payroll" pertains to both:

Salaries - managerial, administrative, and sales personnel (monthly or yearly rate).

Wages - store clerks, factory employees, and manual laborers (rate per hour).

Determining the payroll involves computing three amounts: (1) **gross earnings**, (2) **payroll deductions**, and (3) **net pay**.

Determining the Payroll

Gross Earnings

Total compensation earned by an employee (wages or salaries, plus any bonuses and commissions).

Illustration 11-8

<u>Type of Pay</u>	<u>Hours</u>	×	<u>Rate</u>	=	<u>Gross Earnings</u>
Regular	40	×	\$12	=	\$480
Overtime	4	×	18	=	72
Total wages					<u><u>\$552</u></u>

Determining the Payroll

Payroll Deductions

Mandatory:

- FICA tax
- Federal income tax
- State income tax

Voluntary:

- Charity
- Retirement
- Union dues
- Health and life insurance
- Pension plans

Determining the Payroll

Payroll Deductions

Mandatory:

- FICA tax →
- Federal income tax
- State income tax

Social Security taxes

- Supplemental retirement, employment disability, and medical benefits.
- In 2006, the rate was 7.65% (6.2% Social Security plus 1.45% Medicare) on the first \$94,200 of gross earnings for each employee.
For purpose of illustration, assume a rate of 8% on the first \$90,000 of gross earnings, maximum of \$7,200.

Determining the Payroll

Payroll Deductions

Mandatory:

- FICA tax
- Federal income tax
- State income tax

- 
- Employers are required to withhold income taxes from employees pay.
 - Withholding amounts are based on gross wages and the number of allowances claimed.

Determining the Payroll

Payroll Deductions

Mandatory:

- FICA tax
- Federal income tax
- State income tax

➤ Most states (and some cities) require **employers** to withhold income taxes from employees' earnings.

Determining the Payroll

Net Pay

Gross earnings minus payroll deductions.

Illustration 11-11

Gross earnings		\$552.00
Payroll deductions:		
FICA taxes	\$44.16	
Federal income taxes	49.00	
State income taxes	11.04	
United Way	10.00	
Union dues	5.00	119.20
		<u>119.20</u>
Net pay		<u><u>\$432.80</u></u>

Recording the Payroll

Maintaining Payroll Department Records

Employer required by law to keep a cumulative record of each employee's gross earnings, deductions, and net pay during the year.

Illustration 11-12
Employee earnings record

ACADEMY COMPANY Employee Earnings Record For the Year 2008													
Name	Michael Jordan				Address	2345 Mifflin Ave.							
Social Security Number	329-36-9547					Hampton, Michigan 48292							
Date of Birth	December 24, 1962				Telephone	555-238-9051							
Date Employed	September 1, 2003				Date Employment Ended								
Sex	Male				Exemptions	2							
Single	<input type="checkbox"/>				Married	<input checked="" type="checkbox"/>							
2008	Gross Earnings					Deductions					Payment		
Period Ending	Total Hours	Regular	Overtime	Total	Cumulative	FICA	Fed. Inc. Tax	State Inc. Tax	United Way	Union Dues	Total	Net Amount	Check No.
1/7	42	480.00	36.00	516.00	516.00	41.28	43.00	10.32	10.00	5.00	109.60	406.40	974
1/14	44	480.00	72.00	552.00	1,068.00	44.16	49.00	11.04	10.00	5.00	119.20	432.80	1028
1/21	43	480.00	54.00	534.00	1,602.00	42.72	46.00	10.68	10.00	5.00	114.40	419.60	1077
1/28	42	480.00	36.00	516.00	2,118.00	41.28	43.00	10.32	10.00	5.00	109.60	406.40	1133
Jan. Total		1,920.00	198.00	2,118.00		169.44	181.00	42.36	40.00	20.00	452.80	1,665.20	

Recording the Payroll

Maintaining Payroll Department Records

Many companies find it useful to prepare a payroll register. This record accumulates the gross earnings, deductions, and net pay by employee for each pay period.

Illustration 11-13
Payroll register

ACADEMY COMPANY														
Payroll Register														
For the Week Ending January 14, 2008														
Employee	Total Hours	Earnings			Deductions					Paid		Accounts Debited		
		Regular	Over-time	Gross	FICA	Federal Income Tax	State Income Tax	United Way	Union Dues	Total	Net Pay	Check No.	Office Salaries Expense	Wages Expense
Office Salaries														
Arnold, Patricia	40	580.00		580.00	46.40	61.00	11.60	15.00		134.00	446.00	998	580.00	
Canton, Matthew	40	590.00		590.00	47.20	63.00	11.80	20.00		142.00	448.00	999	590.00	
Mueller, William	40	530.00		530.00	42.40	54.00	10.60	11.00		118.00	412.00	1000	530.00	
Subtotal		5,200.00		5,200.00	416.00	1,090.00	104.00	120.00		1,730.00	3,470.00		5,200.00	
Wages														
Bennett, Robin	42	480.00	36.00	516.00	41.28	43.00	10.32	18.00	5.00	117.60	398.40	1025		516.00
Jordan, Michael	44	480.00	72.00	552.00	44.16	49.00	11.04	10.00	5.00	119.20	432.80	1028		552.00
Milroy, Lee	43	480.00	54.00	534.00	42.72	46.00	10.68	10.00	5.00	114.40	419.60	1029		534.00
Subtotal		11,000.00	1,010.00	12,010.00	960.80	2,400.00	240.20	301.50	115.00	4,017.50	7,992.50			12,010.00
Total		16,200.00	1,010.00	17,210.00	1,376.80	3,490.00	344.20	421.50	115.00	5,747.50	11,462.50		5,200.00	12,010.00

Recording the Payroll

Recognizing Payroll Expenses and Liabilities

E11-10 Joyce Kieffer's regular hourly wage rate is \$15, and she receives a wage of 1.5 times the regular hourly rate for work in excess of 40 hours. During a March weekly pay period Joyce worked 42 hours. Her gross earnings prior to the current week were \$6,000. Joyce is married and claims three withholding allowances. Her only voluntary deduction is for group hospitalization insurance at \$25 per week. For state income tax, assume a 2.0% rate.

Instructions: Record Joyce's pay, assuming she is an office computer operator.

Recording the Payroll

E11-10 Record Joyce's pay, assuming she is an office computer operator.

Wages expense	645.00	*	
FICA tax payable	51.60	**	
Federal tax payable	55.00	***	
State tax payable	12.90	****	
Insurance payable	25.00		
Wages payable	500.50		

* $(40 \times \$15) + (2 \times \$22.50) = \$645$

*** Table, next slide

** $\$645 \times 8\% = \51.60

**** $\$645 \times 2\% = \12.90

Recording the Payroll

E11-10 Joyce is married and claims three withholding allowances.

Illustration 11-10

Federal Tax Withholding

MARRIED Persons — WEEKLY Payroll Period

(For Wages Paid in 2008)

If the wages are —		And the number of withholding allowances claimed is —										
At least	But less than	0	1	2	3	4	5	6	7	8	9	10
		The amount of income tax to be withheld is —										
490	500	56	48	40	32	24	17	9	1	0	0	0
500	510	57	49	42	34	26	18	10	3	0	0	0
510	520	59	51	43	35	27	20	12	4	0	0	0
520	530	60	52	45	37	29	21	13	6	0	0	0
530	540	62	54	46	38	30	23	15	7	0	0	0
540	550	63	55	48	40	32	24	16	9	1	0	0
550	560	65	57	49	41	33	26	18	10	2	0	0
560	570	66	58	51	43	35	27	19	12	4	0	0
570	580	68	60	52	44	36	29	21	13	5	0	0
580	590	69	61	54	46	38	30	22	15	7	0	0
590	600	71	63	55	47	39	32	24	16	8	1	0
600	610	72	64	57	49	41	33	25	18	10	2	0
610	620	74	66	58	50	42	35	27	19	11	4	0
620	630	75	67	60	52	44	36	28	21	13	5	0
630	640	77	69	61	53	45	38	30	22	14	7	0
640	650	78	70	63	55	47	39	31	24	16	8	0
650	660	80	72	64	56	48	41	33	25	17	10	2
660	670	81	73	66	58	50	42	34	27	19	11	3

Recording the Payroll

Recording Payment of the Payroll

Using the facts from **E11-10**.

Wages payable	500.50	
Cash		500.50

Employer Payroll Taxes

Payroll tax expense results from three taxes that governmental agencies levy **on employers**.

These taxes are:

- FICA tax
- Federal unemployment tax
- State unemployment tax

- Same rate and maximum earnings as the employee's.
- In 2006, the rate was 7.65% (6.2% Social Security plus 1.45% Medicare) on the first \$94,200 of gross earnings for each employee.

Employer Payroll Taxes

Payroll tax expense results from three taxes that governmental agencies levy on employers.

These taxes are:

- FICA
- Federal unemployment tax
- State unemployment tax

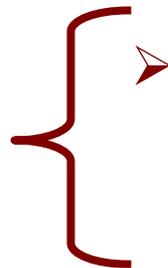
- FUTA tax rate is 6.2% of first \$7,000 of taxable wages.
- Employers who pay the state unemployment tax on a timely basis will receive an offset credit of up to 5.4%. Therefore, the net federal tax rate is generally 0.8%.

Employer Payroll Taxes

Payroll tax expense results from three taxes that governmental agencies levy on employers.

These taxes are:

- FICA
- Federal unemployment tax
- State unemployment tax



➤ SUTA basic rate is usually 5.4% on the first \$7,000 of wages paid.

Employer Payroll Taxes

E11-14 According to a payroll register summary of Ruiz Company, the amount of employees' gross pay in December was \$850,000, of which \$90,000 was not subject to FICA tax and \$750,000 was not subject to state and federal unemployment taxes.

Instructions:

Prepare the journal entry to record December payroll tax expense. Use the following rates: FICA 8%, state unemployment 5.4%, federal unemployment 0.8%.

Employer Payroll Taxes

E11-14 Prepare the journal entry to record December payroll tax expense. Use the following rates: FICA 8%, state unemployment 5.4%, federal unemployment 0.8%.

Payroll tax expense	67,000	
FICA tax payable	60,800	*
State unemployment tax payable	5,400	**
Federal unemployment tax payable	800	***

* $\$760,000 \times 8\% = \$60,800$

*** $\$100,000 \times .8\% = \$5,400$

** $\$100,000 \times 5.4\% = \$5,400$

Employer Payroll Taxes

Question

Employer payroll taxes do *not* include:

- a. Federal unemployment taxes.
- b. State unemployment taxes.
- c. Federal income taxes.
- d. FICA taxes.

Filing and Remitting Payroll Taxes

Companies must report **FICA taxes** and **federal income taxes withheld** no later than one month following the close of each quarter.

Companies generally file and remit **federal unemployment taxes** annually on or before January 31 of the subsequent year. Companies usually file and pay **state unemployment taxes** by the end of the month following each quarter.

Employers must provide each employee with a **Wage and Tax Statement (Form W-2)** by January 31.

Internal Control for Payroll

As applied to payroll, the objectives of internal control are

1. to safeguard company assets against unauthorized payments of payrolls, and
2. to ensure the accuracy and reliability of the accounting records pertaining to payrolls.

Additional Fringe Benefits

In addition to the three payroll-tax fringe benefits, employers incur other substantial fringe benefit costs.

Two of the most important fringe benefits include:

- Paid absences
- Post-retirement benefits

Paid Absences

- Employees often are given rights to receive compensation for absence when they meet certain conditions of employment.
- The compensation may be for paid vacations, sick pay benefits, and paid holidays.
- When the payment for such absences is **probable** and the amount can be **reasonably estimated**, the company should accrue a liability for paid future absences.
- When the amount **cannot be reasonably estimated**, the company should instead **disclose** the potential liability.

LO 9 Identify additional fringe benefits associated with employee compensation.

Post-Retirement Benefits

Post-retirement benefits are benefits that employers provide to retired employees for **(1) pensions** and **(2) health care and life insurance**.

Companies account for post-retirement benefits on the **accrual basis**.

The cost of post-retirement benefits is getting steep.

Pensions

A **pension plan** is an agreement whereby employers provide benefits to employees after they retire.

There are two types of pension plans:

In a **defined-contribution plan**, the plan defines the contribution that an employer will make but not the benefit that the employee will receive at retirement. This is often referred to as a **401 (k) plan**.

In a **defined-benefit plan**, the employer agrees to pay a defined amount to retirees, based on employees meeting certain eligibility standards.

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 12

ACCOUNTING FOR PARTNERSHIPS

Accounting Principles, Eighth Edition

Study Objectives

1. Identify the characteristics of the partnership form of business organization.
2. Explain the accounting entries for the formation of a partnership.
3. Identify the bases for dividing net income or net loss.
4. Describe the form and content of partnership financial statements.
5. Explain the effects of the entries to record the liquidation of a partnership.

Accounting for Partnerships

Partnership Form of Organization

- Characteristics
- Organizations with partnership characteristics
- Advantages / disadvantages
- Partnership agreement

Basic Partnership Accounting

- Forming a partnership
- Dividing net income / loss
- Financial statements

Liquidation of a Partnership

- No capital deficiency
- Capital deficiency

Partnership Form of Organization

A **partnership** is an association of two or more persons to carry on as co-owners of a business for profit.

Type of Business:

- Small retail, service, or manufacturing companies.
- Accountants, lawyers, and doctors.

Partnership Form of Organization

Discussion Question

Q12-1 The characteristics of a partnership include the following: (a) association of individuals, (b) limited life, and (c) co-ownership of property. Explain each of these terms.

See notes page for discussion

Characteristics of Partnerships

Association of Individuals

- Legal entity.
- Accounting entity.
- Net income not taxed as a separate entity.

Mutual Agency

- Act of any partner is binding on all other partners, so long as the act appears to be appropriate for the partnership.

Characteristics of Partnerships

Limited Life

- Dissolution occurs whenever a partner withdraws or a new partner is admitted.
- Dissolution does not mean the business ends.

Unlimited Liability

- Each partner is personally and individually liable for all partnership liabilities.

Characteristics of Partnerships

Co-ownership of Property

- Each partner has a claim on total assets.
- This claim does not attach to **specific assets**.
- All net income or net loss is shared equally by the partners, unless otherwise stated in the partnership agreement.

Characteristics of Partnerships

Question

All of the following are characteristics of partnerships except:

- a. co-ownership of property.
- b. mutual agency.
- c. limited life.
- d. limited liability.

Organizations with Partnership Characteristics

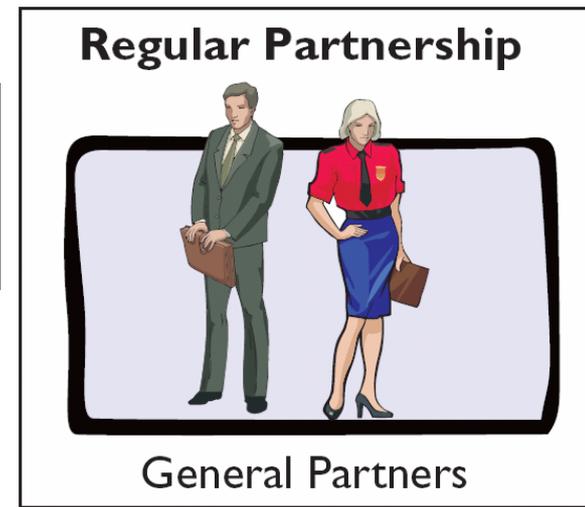
Special forms of business organizations are often used to provide protection from unlimited liability.

Special partnership forms are:

1. Limited Partnerships,
2. Limited Liability Partnerships, and
3. Limited Liability Companies.

Organizations with Partnership Characteristics

Regular Partnership



Major Advantages

- Simple and inexpensive to create and operate.

Major Disadvantages

- Owners (partners) personally liable for business debts.

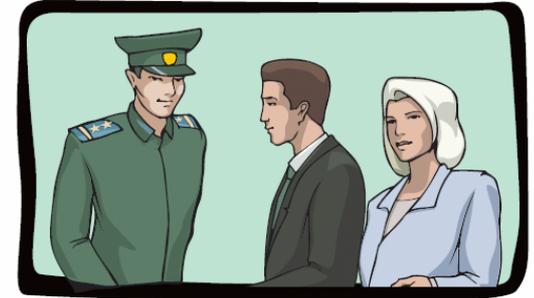
Organizations with Partnership Characteristics

Major Advantages

"Ltd.," or "LP"

- Limited partners have limited personal liability for business debts as long as they do not participate in management.
- General partners can raise cash without involving outside investors in management of business.

Limited Partnership



General
Partners

Limited
Partners

Major Disadvantages

- General partners personally liable for business debts.
- More expensive to create than regular partnership.
- Suitable for companies that invest in real estate.

Organizations with Partnership Characteristics

"LLP"



Major Advantages

- Mostly of interest to partners in old-line professions such as law, medicine, and accounting.
- Owners (partners) are not personally liable for the malpractice of other partners.

Major Disadvantages

- Unlike a limited liability company, partners remain personally liable for many types of obligations owed to business creditors, lenders, and landlords.
- Often limited to a short list of professions.

Organizations with Partnership Characteristics

Major Advantages

- Owners have limited personal liability for business debts even if they participate in management.

"LLC"

Limited Liability Company



Major Disadvantages

- More expensive to create than regular partnership.

Partnership Characteristics

Discussion Question

Q12-3 Brent Houghton and Dick Kreibach are considering a business venture. They ask you to explain the advantages and disadvantages of the partnership form of organization.

See notes page for discussion

Partnership Characteristics

Question

Under which of the following business organization forms do limited partners have little, if any, active role in the management of the business?

- a. Limited liability partnership.
- b. Limited partnership.
- c. Limited liability companies.
- d. None of the above.

Partnership Agreement

Should specify relationships among the partners:

1. Names and capital contributions of partners.
2. Rights and duties of partners.
3. Basis for sharing net income or net loss.
4. Provision for withdrawals of assets.
5. Procedures for submitting disputes to arbitration.
6. Procedures for the withdrawal or addition of a partner.
7. Rights and duties of surviving partners in the event of a partner's death.

Forming a Partnership

Question

When a partner invests noncash assets in a partnership, the assets should be recorded at their:

- a. book value.
- b. carrying value.
- c. fair market value.
- d. original cost.

Forming a Partnership

Partner's initial investment should be recorded at the **fair market value** of the assets at the date of their transfer to the partnership.

E12-2 Meissner, Cohen, and Hughes are forming a partnership. Meissner is transferring \$50,000 of cash to the partnership. Cohen is transferring land worth \$15,000 and a small building worth \$80,000. Hughes transfers cash of \$9,000, accounts receivable of \$32,000 and equipment worth \$19,000. The partnership expects to collect \$29,000 of the accounts receivable.

Instructions: Prepare the journal entries to record each of the partners' investments.

Forming a Partnership

E12-2 Meissner is transferring \$50,000 of cash to the partnership. Prepare the entry.

Cash	50,000	
Meissner, Capital		50,000

Cohen is transferring land worth \$15,000 and a small building worth \$80,000. Prepare the entry.

Land	15,000	
Building	80,000	
Cohen, Capital		95,000

Forming a Partnership

E12-2 Hughes transfers cash of \$9,000, accounts receivable of \$32,000 and equipment worth \$19,000. The partnership expects to collect \$29,000 of the accounts receivable. Prepare the entry.

Cash	9,000	
Accounts receivable	32,000	
Equipment	19,000	
Allowance for doubtful accounts		3,000
Hughes, Capital		57,000

Dividing Net Income or Net Loss

Partners equally share net income or net loss unless the partnership contract indicates otherwise.

Closing Entries:

- Close all Revenue and Expense accounts to Income Summary.
- Close Income Summary to each partner's Capital account for his or her share of net income or loss.
- Close each partner's Drawing account to his or her respective Capital account.

Dividing Net Income or Net Loss

Income Ratios

Partnership agreement should specify the basis for sharing net income or net loss. Typical income ratios:

- Fixed ratio.
- Ratio based on capital balances.
- Salaries to partners and remainder on a fixed ratio.
- Interest on partners' capital balances and the remainder on a fixed ratio.
- Salaries to partners, interest on partners' capital, and the remainder on a fixed ratio.

Dividing Net Income or Net Loss

Discussion Question

Q12-7 Blue and Grey are discussing how income and losses should be divided in a partnership they plan to form. What factors should be considered in determining the division of net income or net loss?

See notes page for discussion

Dividing Net Income or Net Loss

Question

Which of the following statements is correct?

- a. Salaries to partners and interest on partners' capital are expenses of the partnership.
- b. Salaries to partners are an expense of the partnership but not interest on partners' capital.
- c. Interest on partners' capital are expenses of the partnership but not salaries to partners.
- d. Neither salaries to partners nor interest on partners' capital are expenses of the partnership.

Dividing Net Income or Net Loss

Exercise F. Astaire and G. Rogers have capital balances on January 1 of \$50,000 and \$40,000, respectively. The partnership income-sharing agreement provides for (1) annual salaries of \$20,000 for Astaire and \$12,000 for Rogers, (2) interest at 10% on beginning capital balances, and (3) remaining income or loss to be shared 60% by Astaire and 40% by Rogers.

Instructions

- (a) Prepare a schedule showing the distribution of net income, assuming net income is (1) \$55,000 and (2) \$30,000.
- (b) Journalize the allocation of net income in each of the situations above.

Dividing Net Income or Net Loss

Exercise Prepare a schedule showing the distribution of net income, assuming net income is (1) \$55,000 and (2) \$30,000.

(1)

DIVISION OF NET INCOME

	<u>F. Astaire</u>	<u>G. Rogers</u>	<u>Total</u>
Salary allowance	\$20,000	\$12,000	\$32,000
Interest allowance			
F. Astaire (\$50,000 X 10%)	5,000		
G. Rogers (\$40,000 X 10%)		4,000	
Total interest	<u> </u>	<u> </u>	<u>9,000</u>
Total salaries and interest.....	25,000	16,000	41,000
Remaining income, \$14,000 (\$55,000 – \$41,000)			
F. Astaire (\$14,000 X 60%)	8,400		
G. Rogers (\$14,000 X 40%)		5,600	
Total remainder.....	<u> </u>	<u> </u>	<u>14,000</u>
Total division.....	<u>\$33,400</u>	<u>\$21,600</u>	<u>\$55,000</u>

Dividing Net Income or Net Loss

Exercise Prepare a schedule showing the distribution of net income, assuming net income is (1) \$55,000 and (2) \$30,000.

(2)

DIVISION OF NET INCOME

	<u>F. Astaire</u>	<u>G. Rogers</u>	<u>Total</u>
Salary allowance	\$20,000	\$12,000	\$32,000
Interest allowance.....	<u>5,000</u>	<u>4,000</u>	<u>9,000</u>
Total salaries and interest.....	25,000	16,000	41,000
Remaining deficiency, (\$11,000) (\$41,000 – \$30,000)			
F. Astaire (\$11,000 X 60%).....	(6,600)		
G. Rogers (\$11,000 X 40%)		(4,400)	
Total remainder.....			<u>(11,000)</u>
Total division.....	<u>\$18,400</u>	<u>\$11,600</u>	<u>\$30,000</u>

Dividing Net Income or Net Loss

Exercise Journalize the allocation of net income in each of the situations above.

(1)	Income summary	55,000	
	F. Astaire, Capital		33,400
	G. Rogers, Capital		21,600
(2)	Income summary	30,000	
	F. Astaire, Capital		18,400
	G. Rogers, Capital		11,600

Partnership Financial Statements

Illustration 12-7

KINGSLEE COMPANY			
Partners' Capital Statement			
For the Year Ended December 31, 2008			
	Sara King	Ray Lee	Total
Capital, January 1	\$28,000	\$24,000	\$52,000
Add: Additional investment	2,000		2,000
Net income	12,400	9,600	22,000
	42,400	33,600	76,000
Less: Drawings	7,000	5,000	12,000
Capital, December 31	\$35,400	\$28,600	\$64,000

As in a proprietorship, partners' capital may change due to (1) additional investment, (2) drawing, and (3) net income or net loss.

Partnership Financial Statements

Illustration 12-8

KINGSLEE COMPANY		
Balance Sheet (partial)		
December 31, 2008		
Total liabilities (assumed amount)		\$115,000
Owners' equity		
Sara King, Capital	\$35,400	
Ray Lee, Capital	<u>28,600</u>	
Total owners' equity		<u>64,000</u>
Total liabilities and owners' equity		<u><u>\$179,000</u></u>

The balance sheet for a partnership is the same as for a proprietorship except for the owner's equity section.

Liquidation of a Partnership

Question

The first step in the liquidation of a partnership is to:

- a. allocate gain/loss on realization to the partners.
- b. distribute remaining cash to partners.
- c. pay partnership liabilities.
- d** sell noncash assets and recognize a gain or loss on realization.

Liquidation of a Partnership

Ends both the legal and economic life of the entity.

In liquidation, sale of noncash assets for cash is called realization. To liquidate, it is necessary to:

1. Sell noncash assets for cash and recognize a gain or loss on realization.
2. Allocate gain/loss on realization to the partners based on their income ratios.
3. Pay partnership liabilities in cash.
4. Distribute remaining cash to partners on the basis of their capital balances.

Liquidation of a Partnership

No Capital
Deficiency

E12-8 variation The ARES partnership at December 31 has cash \$20,000, noncash assets \$100,000, liabilities \$55,000, and the following capital balances: Cassandra \$45,000 and Penelope \$20,000. The firm is liquidated, and \$120,000 in cash is received for the noncash assets. Cassandra and Penelope income ratios are 60% and 40%, respectively.

Instructions:

Prepare a cash distribution schedule.

Liquidation of a Partnership

No Capital
Deficiency

E12-8 variation Prepare a cash distribution schedule.

THE ARES COMPANY Schedule of Cash Payments

Item	Cash	Noncash Assets	Liabilities	Cassandra Capital	Penelope Capital
Balances before liquidation	\$ 20,000	\$100,000	\$55,000	\$45,000	\$20,000
Sale of noncash assets and allo- cation of gain	<u>120,000</u>	<u>(100,000)</u>	<u> </u>	<u>12,000</u>	<u>8,000</u>
New balances	140,000	0	55,000	57,000	28,000
Pay liabilities	<u>(55,000)</u>	<u> </u>	<u>(55,000)</u>	<u> </u>	<u> </u>
New balances	85,000	0	0	57,000	28,000
Cash distribution to partners	<u>(85,000)</u>	<u> </u>	<u> </u>	<u>(57,000)</u>	<u>(28,000)</u>
Final balances	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>

Liquidation of a Partnership

No Capital
Deficiency

E12-9 Data for The ARES partnership are presented in E12-8.

Prepare the entries to record:

- a) The sale of noncash assets.
- b) The allocation of the gain or loss on liquidation to the partners.
- c) Payment of creditors.
- d) Distribution of cash to the partners.

Liquidation of a Partnership

No Capital
Deficiency

E12-9 Prepare the entries to record: a) The sale of noncash assets. b) The allocation of the gain or loss on liquidation to the partners. c) Payment of creditors. d) Distribution of cash to the partners.

(a) Cash	120,000	
Noncash assets		100,000
Gain on realization		20,000
(b) Gain on realization	20,000	
Cassandra, Capital ($\$20,000 \times 60\%$)		12,000
Penelope, Capital ($\$20,000 \times 40\%$)		8,000

Liquidation of a Partnership

No Capital
Deficiency

E12-9 Prepare the entries to record: a) The sale of noncash assets. b) The allocation of the gain or loss on liquidation to the partners. c) Payment of creditors. d) Distribution of cash to the partners.

(c) Liabilities	55,000	
Cash		55,000
(d) Cassandra, Capital	57,000	
Penelope, Capital	28,000	
Cash		85,000

Liquidation of a Partnership

Question

If a partner with a capital deficiency is unable to pay the amount owed to the partnership, the deficiency is allocated to the partners with credit balances:

- a. equally.
- b. on the basis of their income ratios.
- c. on the basis of their capital balances.
- d. on the basis of their original investments.

Liquidation of a Partnership

Capital Deficiency

E12-10 Prior to the distribution of cash to the partners, the accounts in the NJF Company are: Cash \$28,000, Newell Capital (Cr.) \$17,000, Jennings Capital (Cr.) \$15,000, and Farley Capital (Dr.) \$4,000. The income ratios are 5:3:2, respectively.

Instructions

- (a) Prepare the entry to record (1) Farley's payment of \$4,000 in cash to the partnership and (2) the distribution of cash to the partners with credit balances.
- (b) Prepare the entry to record (1) the absorption of Farley's capital deficiency by the other partners and (2) the distribution of cash to the partners with credit balances.

Liquidation of a Partnership

Capital Deficiency

E12-10 (a)

	Cash	Newell, Capital	Jennings, Capital	Farley, Capital
Balances before liquidation	\$ 28,000	\$ (17,000)	\$ (15,000)	\$ 4,000
Farley payment	4,000			(4,000)
Balance	\$ 32,000	\$ (17,000)	\$ (15,000)	\$ -

(a)

Cash	4,000	
Farley, Capital		4,000
Newell, Capital	17,000	
Jennings, Capital	15,000	
Cash		32,000

Liquidation of a Partnership

Capital Deficiency

E12-10 (b)

	Cash	Newell, Capital	Jennings, Capital	Farley, Capital
Balances before liquidation	\$ 28,000	\$ (17,000)	\$ (15,000)	\$ 4,000
Absorb Farley deficiency		2,500	1,500	(4,000)
Balance	\$ 28,000	\$ (14,500)	\$ (13,500)	\$ -

(b)

Newell, Capital	2,500		
Jennings, Capital	1,500		
Farley, Capital			4,000
Newell, Capital	14,500		
Jennings, Capital	13,500		
Cash			28,000

Admission of a Partner

Illustration 12A-1

Admission of Partner through:



1. Purchase of a Partner's Interest



2. Investment of Assets in Partnership

Purchase of a Partner's Interest

Assume that L. Carson agrees to pay \$10,000 each to C. Ames and D. Barker for 33 1/3% of their interest in the Ames-Barker partnership. At the time of admission of Carson, each partner has a \$30,000 capital balance. Both partners, therefore, give up \$10,000 of their capital equity. The entry to record the admission of Carson is:

C. Ames, Capital	10,000	
D. Barker, Capital	10,000	
L. Carson, Capital		20,000

The cash paid by Carson goes directly to the individual partners and not to the partnership. Net assets remain unchanged at \$60,000.

Investment of Assets in a Partnership

Assume that L. Carson agrees to invest \$30,000 in cash in the Ames-barker partnership for a 33 1/3% capital interest. At the time of admission of Carson, each partner has a \$30,000 capital balance. The entry to record the admission of Carson is:

Cash	30,000	
L. Carson, Capital		30,000

Note that both net assets and total capital have increased by \$30,000.

Withdrawal of a Partner

- A partner may withdraw from a partnership **voluntarily**, by selling his or her equity in the firm.
- Or, he or she may withdraw **involuntarily**, by reaching mandatory retirement age or by dying.
- The withdrawal of a partner, like the admission of a partner, legally dissolves the partnership.

Withdrawal of a Partner

Illustration 12A-6

Withdrawal of Partner through:



1. Payment from Partners' Personal Assets



2. Payment from Partnership Assets

Payment From Partners' Personal Assets

Assume that partners Morz, Nead, and Odom have capital balances of \$25,000, \$15,000, and \$10,000, respectively. Morz and Nead agree to buy out Odom's interest. Each of them agrees to pay Odom \$8,000 in exchange for one-half of Odom's total interest of \$10,000. The entry to record the withdrawal is:

Odom, Capital	10,000	
Morz, Capital		5,000
Nead, Capital		5,000

Note that net assets and total capital remain the same at \$50,000. The \$16,000 paid to Odom by the remaining partners isn't recorded by the partnership.

Payment From Partnership Assets

Assume that the following capital balances exist in the RST partnership: Roman \$50,000, Sand \$30,000, and Terk \$20,000. The partners share income in the ratio of 3:2:1, respectively. Terk retires from the partnership and receives a cash payment of \$25,000 from the firm.

In this example, a bonus is paid to the retiring partner since the cash paid to the retiring partner is more than his/her capital balance.

Allocate the bonus to the remaining partners on the basis of their income ratios.

Payment From Partnership Assets

Assume that the following capital balances exist in the RST partnership: Roman \$50,000, Sand \$30,000, and Terk \$20,000. The partners share income in the ratio of 3:2:1, respectively. Terk retires from the partnership and receives a cash payment of \$25,000 from the firm.

The bonus paid to the retiring partner is \$5,000, the difference between the \$25,000 paid to the retiring partner and his/her capital balance.

The allocation of the \$5,000 bonus is: Roman \$3,000 ($\$5,000 \times 3/5$) and Sand \$2,000 ($\$5,000 \times 2/5$).

Payment From Partnership Assets

Assume that the following capital balances exist in the RST partnership: Roman \$50,000, Sand \$30,000, and Terk \$20,000. The partners share income in the ratio of 3:2:1, respectively. Terk retires from the partnership and receives a cash payment of \$25,000 from the firm.

The journal entry to record the withdrawal of Terk is as follows:

Terk, Capital	20,000	
Roman, Capital	3,000	
Sand, Capital	2,000	
Cash		25,000

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 13

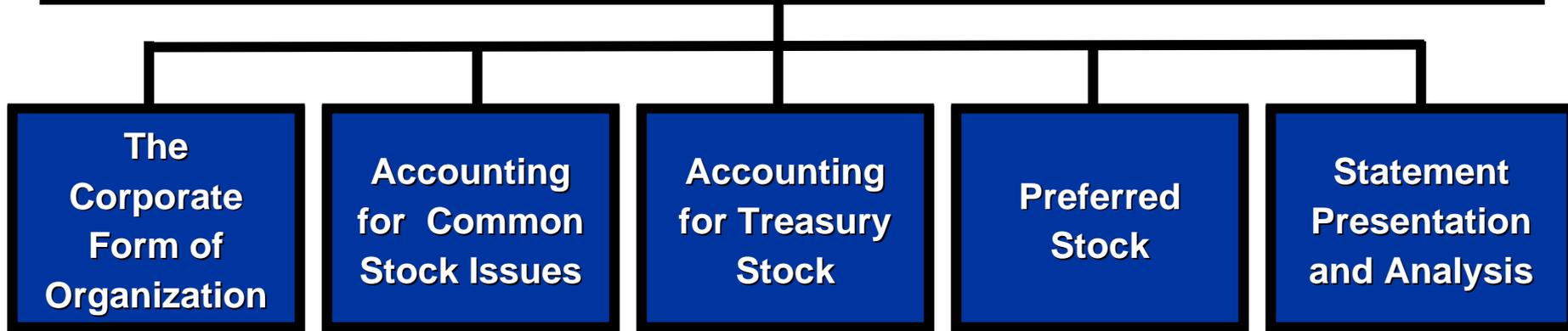
CORPORATIONS: ORGANIZATION AND CAPITAL STOCK TRANSACTIONS

Accounting Principles, Eighth Edition

Study Objectives

1. Identify the major characteristics of a corporation.
2. Differentiate between paid-in capital and retained earnings.
3. Record the issuance of common stock.
4. Explain the accounting for treasury stock.
5. Differentiate preferred stock from common stock.
6. Prepare a stockholders' equity section.
7. Compute book value per share.

Corporations: Organization and Capital Stock Transactions



The Corporate Form of Organization

- Characteristics
- Formation
- Stockholder rights
- Stock issue considerations
- Corporate capital

Accounting for Common Stock Issues

- Issuing par value stock
- Issuing no-par stock
- Issuing stock for services or noncash assets

Accounting for Treasury Stock

- Purchase of treasury stock
- Disposal of treasury stock

Preferred Stock

- Dividend preferences
- Liquidation preference

Statement Presentation and Analysis

- Presentation
- Analysis—Book value per share

The Corporate Form of Organization

An entity separate and distinct from its owners.

Classified by Purpose

- Not-for-Profit
- For Profit

- Salvation Army
- American Cancer Society
- Gates Foundation

Classified by Ownership

- Publicly held
- Privately held

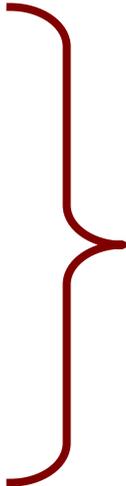
- McDonald's
- Ford Motor Company
- PepsiCo
- Google

- Cargill Inc.

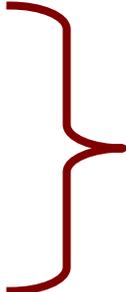
Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life
- Government Regulations
- Additional Taxes
- Corporate Management



Advantages



Disadvantages

Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence →
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life
- Government Regulations
- Additional Taxes
- Corporate Management

Corporation acts under its own name rather than in the name of its stockholders.

Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life
- Government Regulations
- Additional Taxes
- Corporate Management

Limited to their investment.

Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life
- Government Regulations
- Additional Taxes
- Corporate Management

Shareholders may sell their stock.

Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital →
- Continuous Life
- Government Regulations
- Additional Taxes
- Corporate Management

Corporation can obtain capital through the issuance of stock.

Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

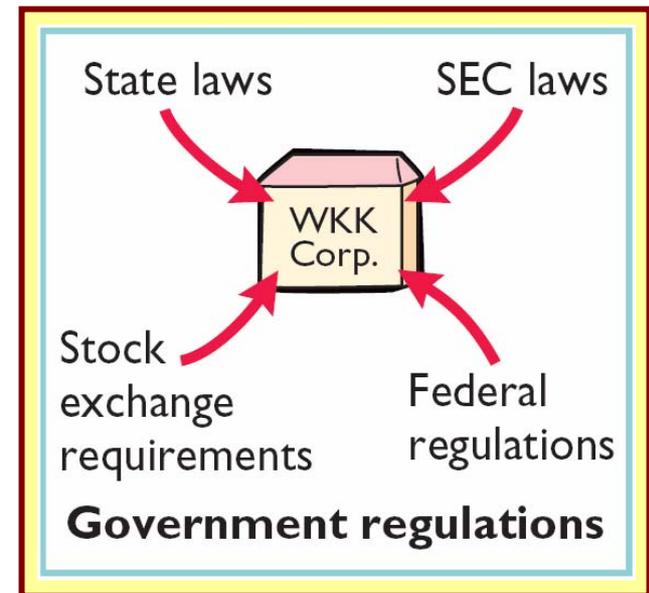
- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life →
- Government Regulations
- Additional Taxes
- Corporate Management

Continuance as a going concern is not affected by the withdrawal, death, or incapacity of a stockholder, employee, or officer.

Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life
- Government Regulations
- Additional Taxes
- Corporate Management



Characteristics of a Corporation

Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life
- Government Regulations
- Additional Taxes →
- Corporate Management

Corporations pay income taxes as a separate legal entity and **in addition**, stockholders pay taxes on cash dividends.

Characteristics of a Corporation

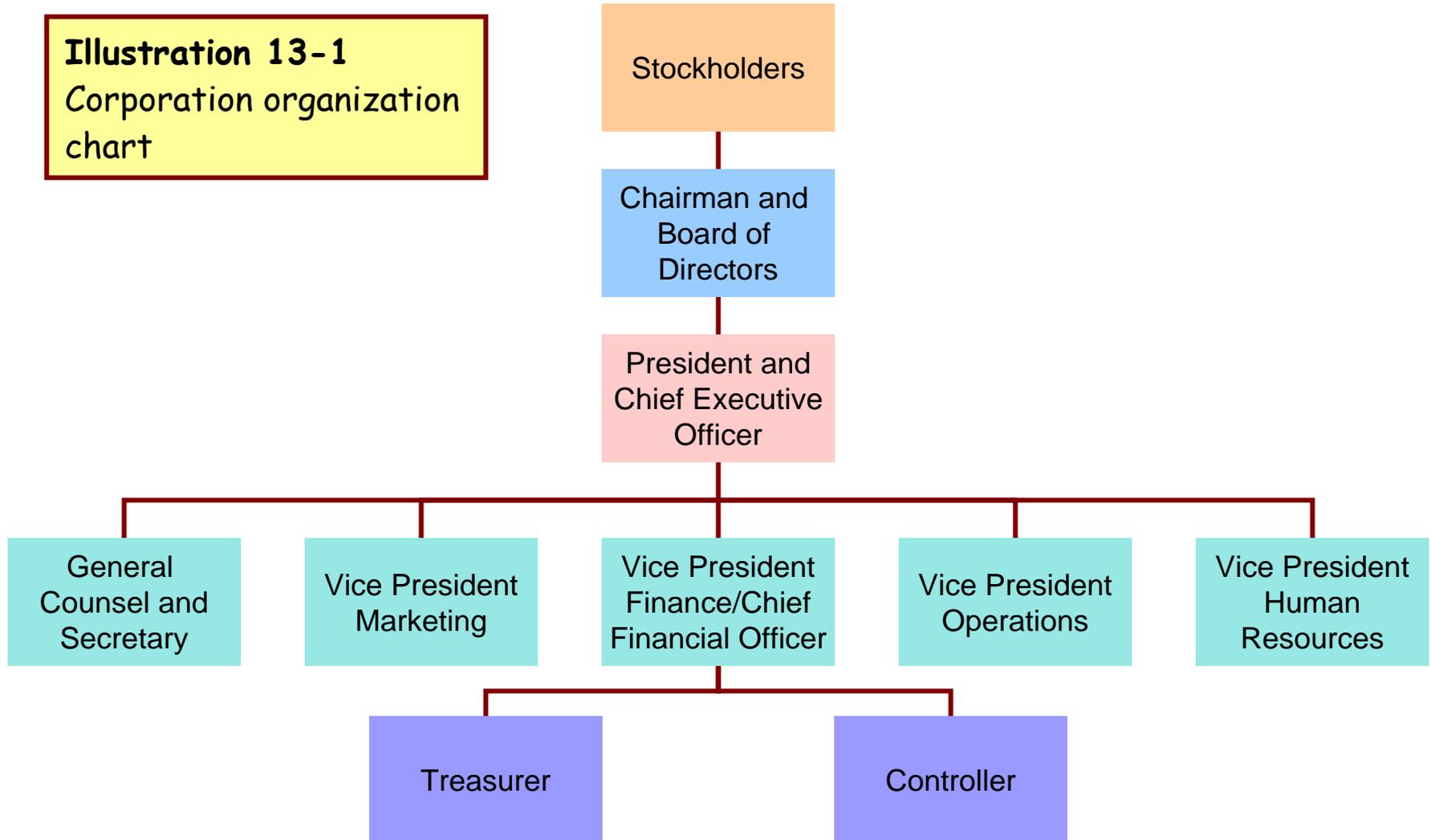
Characteristics that distinguish corporations from proprietorships and partnerships.

- Separate Legal Existence
- Limited Liability of Stockholders
- Transferable Ownership Rights
- Ability to Acquire Capital
- Continuous Life
- Government Regulations
- Additional Taxes
- Corporate Management →

Separation of ownership and management prevents owners from having an active role in managing the company.

Characteristics of a Corporation

Illustration 13-1
Corporation organization chart



Forming a Corporation

Initial Steps:

- File application with the Secretary of State.
- State grants charter.
- Corporation develops by-laws.

Companies generally incorporate in a state whose laws are favorable to the corporate form of business (Delaware, New Jersey).

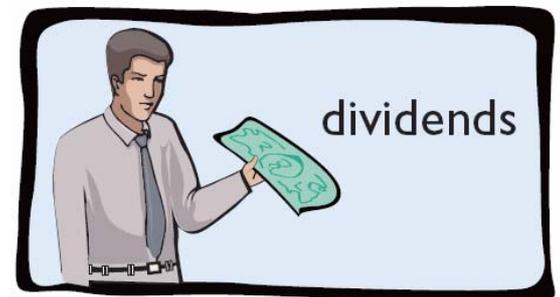
Corporations expense organization costs as incurred.

Ownership Rights of Stockholders

Illustration 13-3

Stockholders have the right to:

1. **Vote** in election of board of directors and on actions that require stockholder approval.
2. **Share** the corporate **earnings** through receipt of dividends.



Ownership Rights of Stockholders

Illustration 13-3

Stockholders have the right to:

3. Keep the same percentage ownership when new shares of stock are issued (preemptive right*).



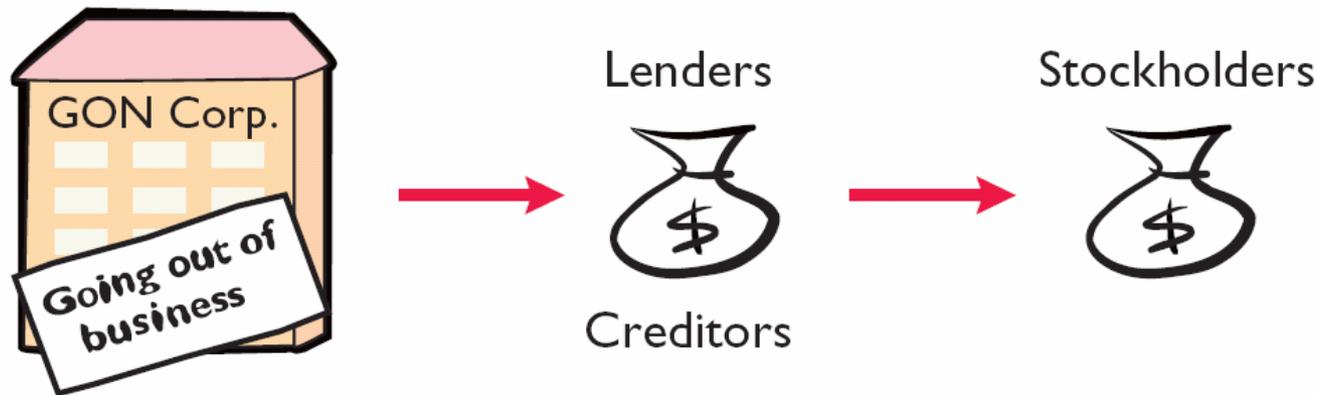
- * A number of companies have eliminated the preemptive right.

Ownership Rights of Stockholders

Illustration 13-3

Stockholders have the right to:

4. Share in assets upon liquidation in proportion to their holdings. This is called a **residual claim**.



Ownership Rights of Stockholders

Illustration 13-4

Prenumbered

Class

Name of corporation
Stockholder's name

Signature of
corporate official



Stock Issue Considerations

Authorized Stock

- Charter indicates the amount of stock that a corporation is authorized to sell.
- Number of authorized shares is often reported in the stockholders' equity section.

Stock Issue Considerations

Issuance of Stock

- Corporation can issue common stock directly to investors or indirectly through an investment banking firm.
- Factors in setting price for a new issue of stock:
 1. the company's anticipated future earnings
 2. its expected dividend rate per share
 3. its current financial position
 4. the current state of the economy
 5. the current state of the securities market

Stock Issue Considerations

Market Value of Stock

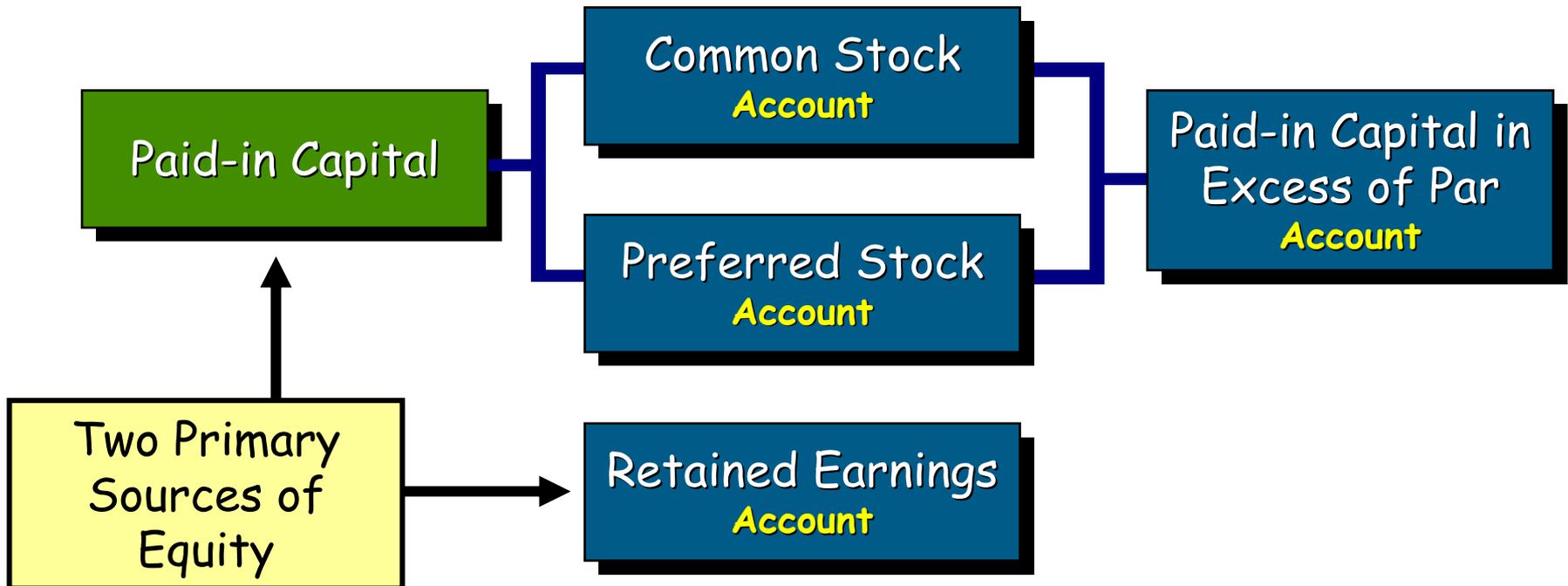
- Stock of publicly held companies is traded on organized exchanges.
- Interaction between buyers and sellers determines the prices per share.
- Prices set by the marketplace tend to follow the trend of a company's earnings and dividends.
- Factors beyond a company's control, may cause day-to-day fluctuations in market prices.

Stock Issue Considerations

Par and No-Par Value Stock

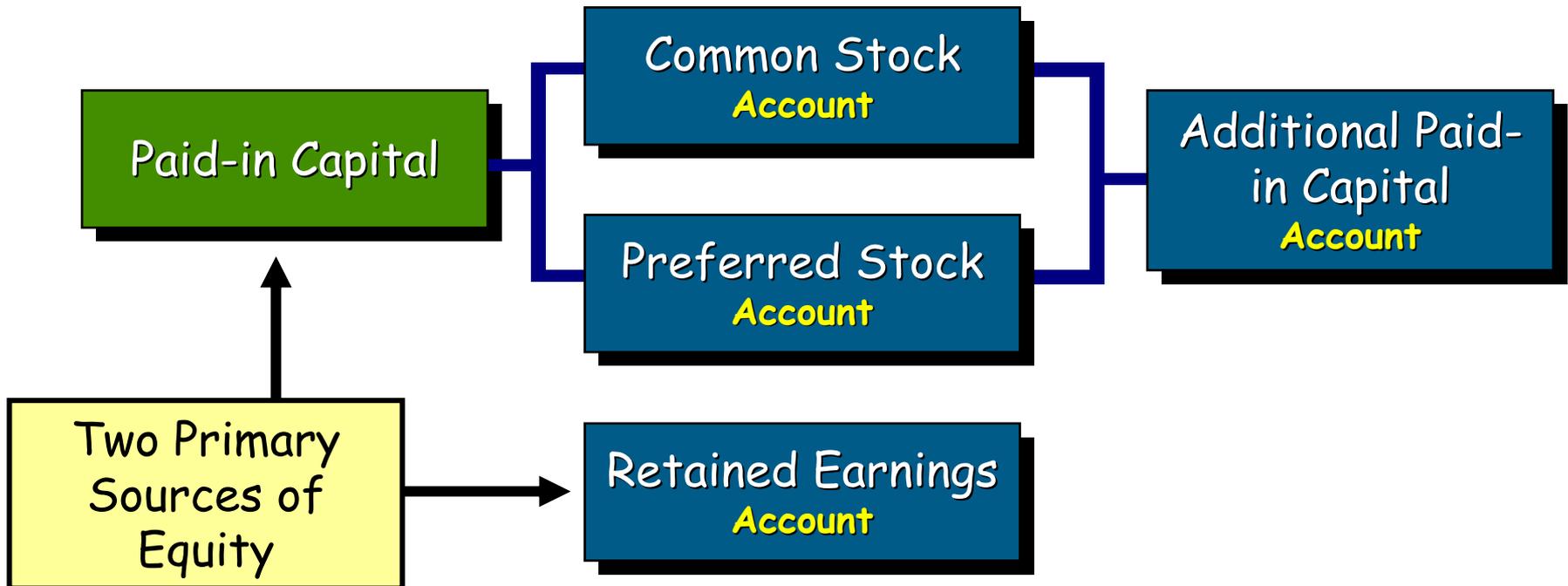
- Years ago, **par value** determined the **legal capital** per share that a company must retain in the business for the protection of corporate creditors.
- Today many states do not require a par value.
- **No-par** value stock is quite common today.
- In many states the board of directors assigns a **stated value** to no-par shares.

Corporate Capital



Paid-in capital is the total amount of cash and other assets paid in to the corporation by stockholders in exchange for capital stock.

Corporate Capital



Retained earnings is net income that a corporation retains for future use.

Corporate Capital

Comparison of the owners' equity (stockholders' equity) accounts reported on a balance sheet for a proprietorship, a partnership, and a corporation.

Illustration 13-6

Proprietorship

Able, Capital	
	Normal bal.

Partnership

Able, Capital	
	Normal bal.

Corporation

Common Stock	
	Normal bal.

Baker, Capital

	Normal bal.
--	-------------

Retained Earnings

	Normal bal.
--	-------------

Accounting for Common Stock Issues

Primary objectives:

- 1) Identify the specific sources of paid-in capital.
- 2) Maintain the distinction between paid-in capital and retained earnings.

The issuance of common stock affects only paid-in capital accounts.

Accounting for Common Stock Issues

Illustration: Viking Corporation issued 300 shares of \$10 par value common stock for \$4,100. Prepare Vikings' journal entry.

Cash	4,100	
Common stock (300 × \$10)		3,000
Paid-in capital in excess of par		1,100

Accounting for Common Stock Issues

Illustration: Knopfle Corporation issued 600 shares of no-par common stock for \$10,200. Prepare Knopfle's journal entry if (a) the stock has no stated value, and (b) the stock has a stated value of \$2 per share.

a.	Cash	10,200	
	Common stock		10,200
b.	Cash	10,200	
	Common stock (600 × \$2)		1,200
	Paid-in capital in excess of stated value		9,000

Accounting for Common Stock Issues

Issuing Common Stock for Services or Noncash Assets

Corporations also may issue stock for:

- Services (attorneys or consultants).
- Noncash assets (land, buildings, and equipment).

Cost is either the fair market value of the consideration given up, or the fair market value of the consideration received, whichever is more clearly determinable.

Accounting for Common Stock Issues

E13-5 On March 2nd, Leone Co. issued 5,000 shares of \$5 par value common stock to attorneys in payment of a bill for \$30,000 for services provided in helping the company to incorporate.

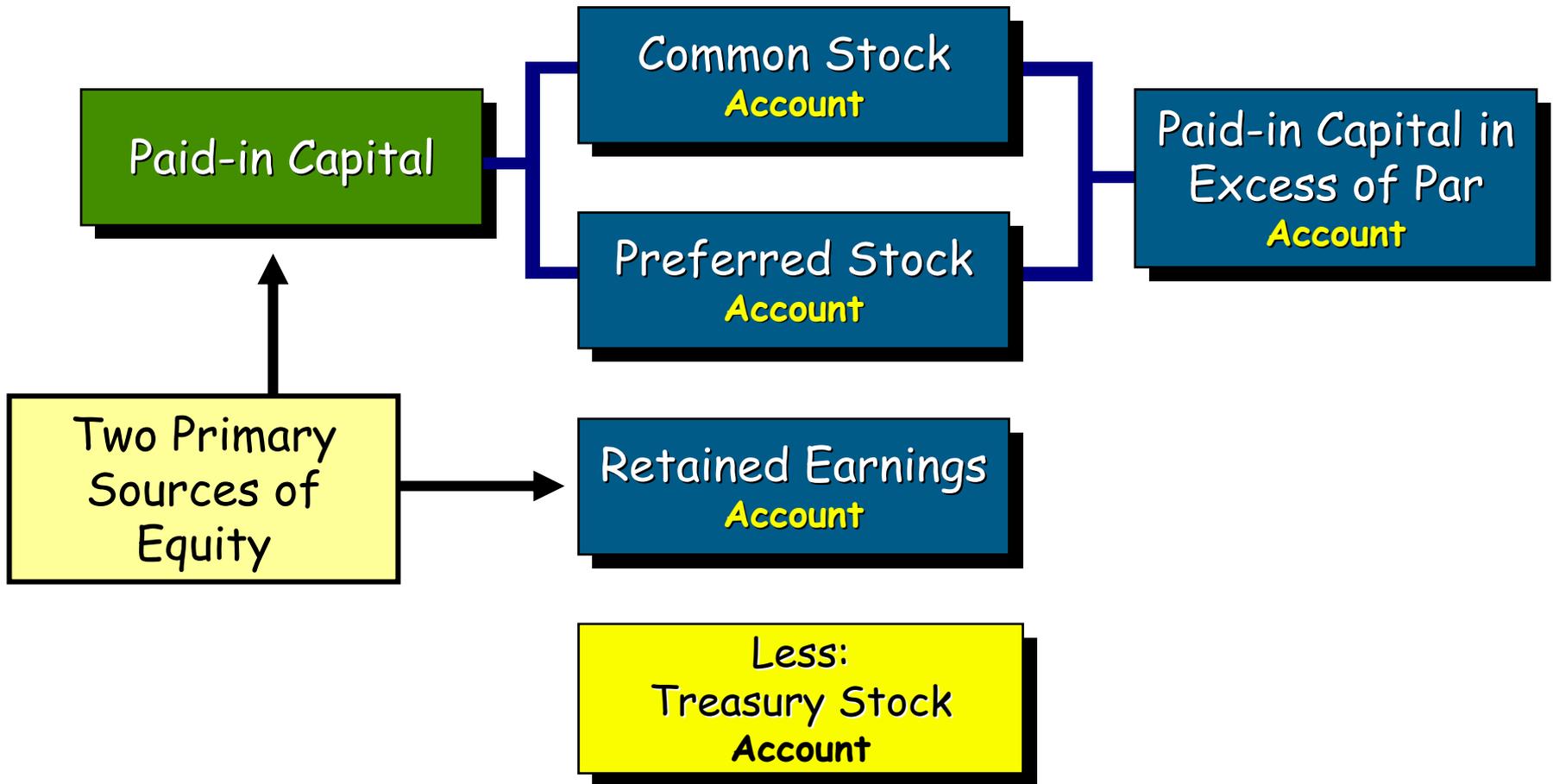
Organizational expense	30,000	
Common stock (5,000 × \$5)		25,000
Paid-in capital in excess of par		5,000

Accounting for Common Stock Issues

BE13-5 Kane Inc.'s \$10 par value common stock is actively traded at a market value of \$15 per share. Kane issues 5,000 shares to purchase land advertised for sale at \$85,000. Journalize the issuance of the stock in acquiring the land.

Land (5,000 × \$15)	75,000	
Common stock (5,000 × \$10)		50,000
Paid-in capital in excess of par		25,000

Accounting for Treasury Stock



Accounting for Treasury Stock

Treasury stock - corporation's own stock that it has reacquired from shareholders, but not retired.

Corporations purchase their outstanding stock:

1. To reissue the shares to officers and employees under bonus and stock compensation plans.
2. To enhance the stocks market value.
3. To have additional shares available for use in the acquisition of other companies.
4. To increase earnings per share.
5. To rid the company of disgruntled investors, perhaps to avoid a takeover.

Accounting for Treasury Stock

Purchase of Treasury Stock

- Debit Treasury Stock for the price paid to reacquire the shares.
- Treasury stock is a contra stockholders' equity account, not an asset.
- Purchase of treasury stock **reduces stockholders' equity**.

Accounting for Treasury Stock

Illustration: UC Company originally issued 15,000 shares of \$1 par, common stock for \$25 per share. Record the journal entry for the following transaction:
On April 1st the company reacquired 1,000 shares for \$28 per share.

Treasury stock (1,000 × \$28)	28,000	
Cash		28,000

Accounting for Treasury Stock

Stockholders' Equity with Treasury stock

UC Company Balance Sheet (partial)	
Stockholders' equity	
Paid-in capital	
Common stock, \$1 par, 15,000 issued and 14,000 outstanding	\$ 15,000
Paid-in capital in excess of par	360,000
Retained earnings	200,000
Total paid-in capital and retained earnings	<u>575,000</u>
Less: Treasury stock (1,000 shares)	28,000
Total stockholders' equity	<u><u>\$ 547,000</u></u>

Both the number of shares issued (15,000), outstanding (14,000), and the number of shares held as treasury (1,000) are disclosed.

Accounting for Treasury Stock

Sale of Treasury Stock

- Above Cost
- Below Cost

Both increase total assets and stockholders' equity.

Accounting for Treasury Stock

Above
Cost

Illustration: UC Company originally issued 15,000 shares of \$1 par, common stock for \$25 per share. On February 10, UC acquired 500 shares of its stock at \$28 per share. Record the journal entry for the following transaction:

On June 1, UC sold 500 shares of its treasury stock for \$30 per share.

Cash (500 × \$30)	15,000	
Treasury stock (500 × \$28)		14,000
Paid-in capital treasury stock		1,000

Accounting for Treasury Stock

Below
Cost

Illustration: UC Company originally issued 15,000 shares of \$1 par, common stock for \$25 per share. On February 10, UC acquires 500 shares of its stock for \$28 per share and on May 15 sold 200 shares of treasury for \$29 per share. Record the journal entry for the following transaction:

On October 15, UC sold the remaining 300 shares of its treasury stock for \$24 per share.

Cash (300 × \$24)	7,200	
Paid-in capital treasury stock	200	←
Retained earnings	1,000	
Treasury stock (300 × \$28)		8,400

Limited
to
balance
on hand

Preferred Stock

Features often associated with preferred stock.

1. Preference as to dividends.
2. Preference as to assets in liquidation.
3. Nonvoting.

Accounting for preferred stock at issuance is similar to that for common stock.

Preferred Stock

BE13-7 Acker Inc. issues 5,000 shares of \$100 par value preferred stock for cash at \$130 per share. Journalize the issuance of the preferred stock.

Cash (5,000 × \$130)	650,000	
Preferred stock (5,000 × \$100)		500,000
Paid-in capital in excess of par - Preferred stock		150,000

Preferred stock may have a par value or no-par value.

Preferred Stock

Dividend Preferences

- Right to receive dividends before common stockholders.
- Per share dividend amount is stated as a percentage of the preferred stock's par value or as a specified amount.
- **Cumulative dividend** - holders of preferred stock must be paid their annual dividend plus any dividends in arrears before common stockholders receive dividends.

Statement Analysis and Presentation

CONNALLY INC. Balance Sheet (partial)

Illustration 13-12

Stockholders' equity		
Paid-in capital		
Capital stock		
9% preferred stock, \$100 par value cumulative, 10,000 shares authorized, 6,000 shares issued and outstanding		\$ 600,000
Common stock, no par, \$5 stated value, 500,000 shares authorized, 400,000 shares issued, and 390,000 outstanding		<u>2,000,000</u>
Total capital stock		2,600,000
Additional paid-in capital		
In excess of par value—preferred stock	\$ 30,000	
In excess of stated value—common stock	860,000	
From treasury stock	<u>140,000</u>	
Total additional paid-in capital		<u>1,030,000</u>
Total paid-in capital		3,630,000
Retained earnings		<u>1,058,000</u>
Total paid-in capital and retained earnings		4,688,000
Less: Treasury stock—common (10,000 shares) (at cost)		<u>(80,000)</u>
Total stockholders' equity		<u><u>\$4,608,000</u></u>

Statement Analysis and Presentation

Analysis

$$\text{Book Value Per Share} = \frac{\text{Total Stockholders' Equity}^*}{\text{Number of Common Shares Outstanding}}$$

Book value per share generally does not equal market value per share.

* When a company has preferred stock, the preferred stockholders claim on net assets must be deducted from total stockholders' equity.

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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 14

CORPORATIONS: DIVIDENDS, RETAINED EARNINGS, AND INCOME REPORTING

Accounting Principles, Eighth Edition

Study Objectives

1. Prepare the entries for cash dividends and stock dividends.
2. Identify the items reported in a retained earnings statement.
3. Prepare and analyze a comprehensive stockholders' equity section.
4. Describe the form and content of corporation income statements.
5. Compute earnings per share.

Corporations: Dividends, Retained Earnings, and Income Reporting

Dividends

- Cash dividends
- Stock dividends
- Stock splits

Retained Earnings

- Retained earnings restrictions
- Prior period adjustments
- Retained earnings statement

Statement Presentation and Analysis

- Stockholders' Equity Presentation
- Stockholders' Equity Analysis
- Income Statement Presentation
- Income Statement Analysis

Dividends

A distribution of cash or stock to stockholders on a pro rata (proportional) basis.

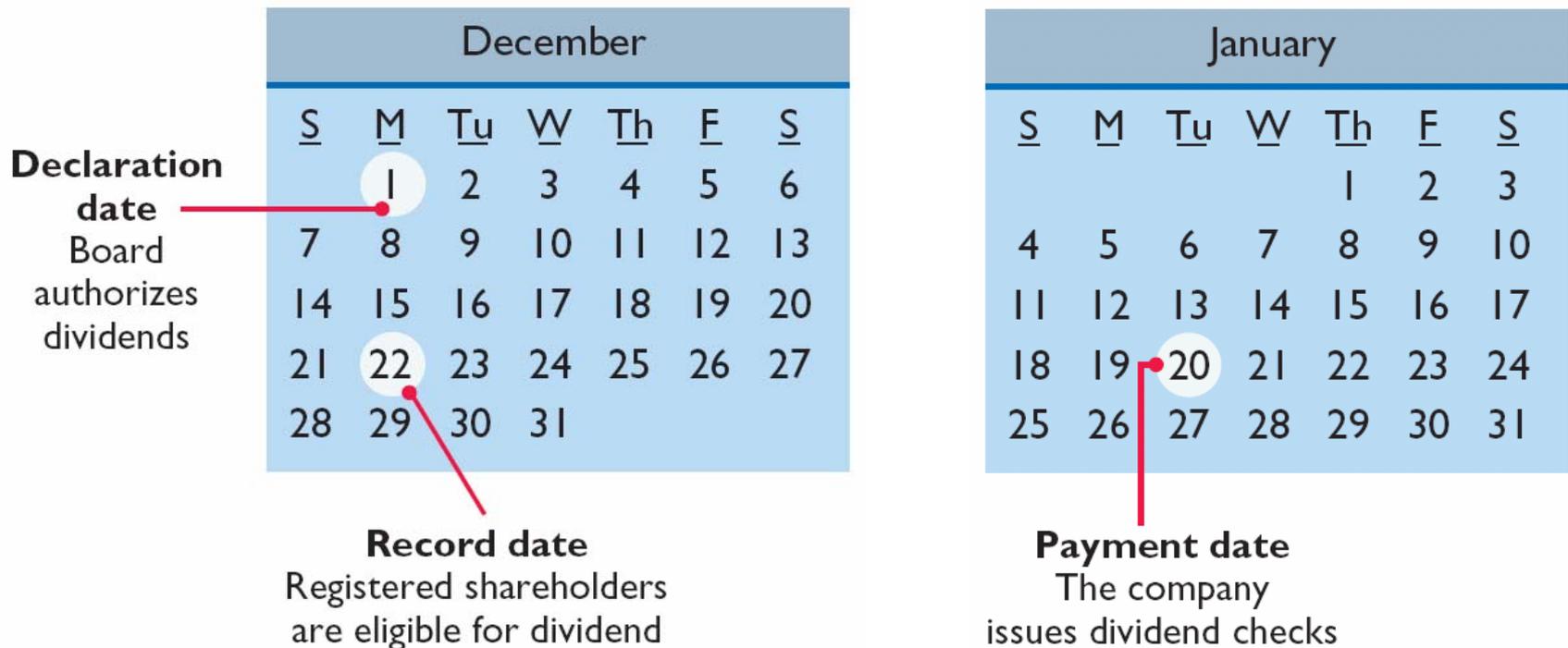
Types of Dividends:

1. Cash dividends.
2. Property dividends.
3. Script (promissory note).
4. Stock dividends.

Dividends expressed: (1) as a percentage of the par or stated value, or (2) as a dollar amount per share.

Dividends

Dividends require information concerning three dates:



Dividends

Cash Dividends

For a corporation to pay a cash dividend, it must have:

1. **Retained earnings** - Payment of cash dividends from retained earnings is legal in all states.
2. **Adequate cash.**
3. **A declaration of dividends** by the Board of Directors.

Dividends

Illustration: What would be the journal entries made by a corporation that declared a \$50,000 cash dividend on March 10, payable on April 6 to shareholders of record on March 25?

March 10 (Declaration Date)

Retained earnings	50,000	
Dividends payable		50,000

March 25 (Date of Record)

No entry

April 6 (Payment Date)

Dividends payable	50,000	
Cash		50,000

Dividends

Allocating Cash Dividends Between Preferred and Common Stock

Holders of **cumulative** preferred stock must be paid any unpaid prior-year dividends before common stockholders receive dividends.

Dividends

Exercise Arnez Corporation was organized on January 1, 2008. During its first year, the corporation issued 2,000 shares of \$50 par value preferred stock and 100,000 shares of \$10 par value common stock. At December 31, the company declared the following cash dividends: 2008, \$6,000, 2009, \$12,000, and 2010, \$28,000.

Instructions: (a) Show the allocation of dividends to each class of stock, assuming the preferred stock dividend is 8% and not cumulative.

Dividends

Exercise (a) Show the allocation of dividends to each class of stock, assuming the preferred stock dividend is 8% and not cumulative.

	2008	2009	2010
Dividends declared	\$ 6,000	\$ 12,000	\$ 28,000
Allocation to preferred *	6,000	8,000	8,000
Remainder to common	\$ -	\$ 4,000	\$ 20,000

* $2,000 \text{ shares} \times \$50 \text{ par} \times 8\% = \$8,000$

Dividends

Exercise (b) Show the allocation of dividends to each class of stock, assuming the preferred stock dividend is 9% and cumulative.

	2008	2009	2010
Dividends declared	\$ 6,000	\$ 12,000	\$ 28,000
Dividends in arrears		3,000	**
Allocation to preferred *	6,000	9,000	9,000
Remainder to common	\$ -	\$ -	\$ 19,000

* $2,000 \text{ shares} \times \$50 \text{ par} \times 9\% = \$9,000$

** $2008 \text{ Pfd. dividends } \$9,000 - \text{declared } \$6,000 = \$3,000$

Dividends

Exercise (c) Journalize the declaration of the cash dividend at December 31, 2010, under part (b).

	2008	2009	2010
Dividends declared	\$ 6,000	\$ 12,000	\$ 28,000
Dividends in arrears		3,000	
Allocation to preferred	6,000	9,000	9,000
Remainder to common	\$ -	\$ -	\$ 19,000

Journal entry:

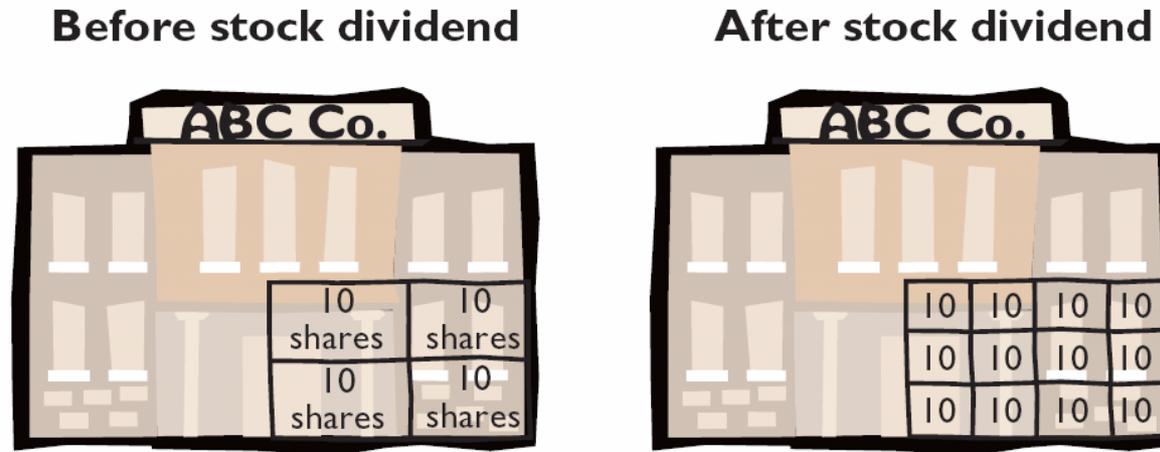
Retained earnings	28,000	
Dividends payable		28,000

Dividends

Stock Dividends

Illustration 14-3

Pro rata distribution of the corporation's own stock.



Number of shares owned increases, but percentage of company owned remains the same.

Results in decrease in retained earnings and increase in paid-in capital.

Dividends

Stock Dividends

Reasons why corporations issue stock dividends:

1. To satisfy stockholders' dividend expectations without spending cash.
2. To increase the marketability of the corporation's stock.
3. To emphasize that a portion of stockholders' equity has been permanently reinvested in the business.

Dividends

Size of Stock Dividends

- **Small stock dividend** (less than 20-25% of the corporation's issued stock, recorded at fair market value) *
- **Large stock dividend** (greater than 20-25% of issued stock, recorded at par value)

* This accounting is based on the assumption that a small stock dividend will have little effect on the market price of the outstanding shares.

Dividends

Illustration: HH Inc. has 5,000 shares issued and outstanding. The per share par value is \$1, book value \$32 and market value is \$40.

10% stock dividend is declared

Retained earnings (5,000 × 10% × \$40)	20,000	
Common stock dividends distributable		500
Additional paid-in capital		19,500

Stock issued

Common stock div. distributable	500	
Common stock (5,000 × 10% × \$1)		500

Dividends

Stockholders' Equity with Dividends Distributable

HH Inc. Balance Sheet (partial)	
Stockholders' equity	
Paid-in capital	
Common stock, \$1 par, 5,000 issued and outstanding	\$ 5,000
Common stock dividends distributable	500
Paid-in capital in excess of par	64,500
Retained earnings	90,000
Total stockholders' equity	<u>\$ 160,000</u>

Dividends

Effects of Stock Dividends

HH Inc.	Before Dividend	After Dividend	Net Change
Stockholders' equity			
Paid-in capital			
Common stock, \$1 par, 5,000 issued and outstanding	\$ 5,000	\$ 5,500	\$ 500
Paid-in capital in excess of par	45,000	64,500	19,500
Retained earnings	110,000	90,000	(20,000)
Total stockholders' equity	<u>\$ 160,000</u>	<u>\$ 160,000</u>	<u>\$ 0</u>
Outstanding shares	<u>5,000</u>	<u>5,500</u>	
Book value per share	<u>\$ 32</u>	<u>\$ 29</u>	

Dividends

Question

Which of the following statements about small stock dividends is true?

- a. A debit to Retained Earnings for the par value of the shares issued should be made.
- b. A small stock dividend decreases total stockholders' equity.
- c. Market value per share should be assigned to the dividend shares.
- d. A small stock dividend ordinarily will have no effect on book value per share of stock.

Dividends

Question

In the stockholders' equity section, Common Stock Dividends Distributable is reported as a(n):

- a. deduction from total paid-in capital and retained earnings.
- b. current liability.
- c. deduction from retained earnings.
- d. addition to capital stock.

Dividends

Stock Split

- Reduces the market value of shares.
- No entry recorded for a stock split.
- Decrease par value and increase number of shares.

Dividends

Illustration: HH Inc. has 5,000 shares issued and outstanding. The per share par value is \$1, book value \$32 and market value is \$40.

2 for 1 Stock Split

No Entry -- Disclosure that par is now \$.50 and shares outstanding are 10,000.

Dividends

Effects of Stock Dividends

HH Inc.	Before Split	After Split	Net Change
Stockholders' equity			
Paid-in capital			
Common stock	\$ 5,000	\$ 5,000	\$ -
Paid-in capital in excess of par	45,000	45,000	-
Retained earnings	110,000	110,000	-
Total stockholders' equity	<u>\$ 160,000</u>	<u>\$ 160,000</u>	<u>\$ -</u>
Outstanding shares	<u>5,000</u>	<u>10,000</u>	
Book value per share	<u>\$ 32</u>	<u>\$ 16</u>	

Retained Earnings

- **Retained earnings** is net income that a company retains for use in the business.
- Net income increases Retained Earnings and a net loss decreases Retained Earnings.
- Retained earnings is part of the stockholders' claim on the total assets of the corporation.
- A debit balance in Retained Earnings is identified as a **deficit**.

Retained Earnings Restrictions

Restrictions can result from:

1. Legal restrictions.
2. Contractual restrictions.
3. Voluntary restrictions.

Companies generally disclose retained earnings restrictions in the notes to the financial statements.

Prior Period Adjustments

Corrections of Errors

- Result from:
 - mathematical mistakes
 - mistakes in application of accounting principles
 - oversight or misuse of facts
- Corrections treated as **prior period adjustments**
- Adjustment made to the beginning balance of retained earnings

Prior Period Adjustments

Woods, Inc.
Statement of Retained Earnings
For the Year Ended December 31, 2008

Balance, January 1	\$ 1,050,000
Net income	360,000
Dividends	<u>(300,000)</u>
Balance, December 31	<u><u>\$ 1,110,000</u></u>

Before issuing the report for the year ended December 31, 2008, you discover a \$50,000 error (net of tax) that caused the 2007 inventory to be overstated (overstated inventory caused COGS to be lower and thus net income to be higher in 2007). Would this discovery have any impact on the reporting of the Statement of Retained Earnings for 2008?

Retained Earnings Statement

Woods, Inc.

Statement of Retained Earnings

For the Year Ended December 31, 2008

Balance, January 1, as previously reported	\$ 1,050,000
Prior period adjustment - error correction	<u>(50,000)</u>
Balance, January 1, as restated	1,000,000
Net income	360,000
Dividends	<u>(300,000)</u>
Balance, December 31	<u><u>\$ 1,060,000</u></u>

Retained Earnings Statement

The company prepares the statement from the Retained Earnings account.

Illustration 14-13

Retained Earnings

1. Net loss	1. Net income
2. Prior period adjustments for overstatement of net income	2. Prior period adjustments for understatement of net income
3. Cash dividends and stock dividends	
4. Some disposals of treasury stock	

Retained Earnings Statement

Question

All *but one* of the following is reported in a retained earnings statement. The exception is:

- a. cash and stock dividends.
- b. net income and net loss.
- c. some disposals of treasury stock below cost.
- d. sales of treasury stock above cost.**

Statement Analysis and Presentation

GRABER INC. Balance Sheet (partial)

Illustration 14-15

Stockholders' equity		
Paid-in capital		
Capital stock		
9% Preferred stock, \$100 par value, cumulative, callable at \$120, 10,000 shares authorized, 6,000 shares issued and outstanding		\$ 600,000
Common stock, no par, \$5 stated value, 500,000 shares authorized, 400,000 shares issued and 390,000 outstanding	\$2,000,000	
Common stock dividends distributable	50,000	2,050,000
Total capital stock		2,650,000
Additional paid-in capital		
In excess of par value—preferred stock	30,000	
In excess of stated value—common stock	1,050,000	
Total additional paid-in capital		1,080,000
Total paid-in capital		3,730,000
Retained earnings (see Note R)		1,160,000
Total paid-in capital and retained earnings		4,890,000
Less: Treasury stock—common (10,000 shares)		80,000
Total stockholders' equity		<u>\$4,810,000</u>

Note R: Retained earnings is restricted for the cost of treasury stock, \$80,000.

LO 3 Prepare and analyze a comprehensive stockholders' equity section.

Statement Analysis and Presentation

Stockholders' Equity Analysis

$$\text{Return on Common Stockholders' Equity} = \frac{\text{Net Income Available to Common Stockholders}}{\text{Average Common Stockholders' Equity}}$$

This ratio shows how many dollars of net income the company earned for each dollar invested by the stockholders.

Statement Analysis and Presentation

Illustration 14-17

Income Statement Presentation

LEADS INC.	
Income Statement	
For the Year Ended December 31, 2008	
Sales	\$800,000
Cost of goods sold	600,000
	<hr/>
Gross profit	200,000
Operating expenses	50,000
	<hr/>
Income from operations	150,000
Other revenues and gains	10,000
Other expenses and losses	(4,000)
	<hr/>
Income before income taxes	156,000
Income tax expense	46,800
	<hr/>
Net income	\$109,200
	<hr/> <hr/>

Statement Analysis and Presentation

Income Statement Analysis

$$\text{Earnings Per Share} = \frac{\text{Net Income minus Preferred Dividends}}{\text{Weighted-Average Common Shares Outstanding}}$$

This ratio indicates the net income earned by each share of outstanding **common stock**.

Statement Analysis and Presentation

Question

The income statement for Nadeen, Inc. shows income before income taxes \$700,000, income tax expense \$210,000, and net income \$490,000. If Nadeen has 100,000 shares of common stock outstanding throughout the year, earnings per share is:

- a. \$7.00.
- b. \$4.90. ($\$490,000 / 100,000 = \4.90)
- c. \$2.10.
- d. No correct answer is given.

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 15

LONG-TERM LIABILITIES

Accounting Principles, Eighth Edition

Study Objectives

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

Long-Term Liabilities

Bonds Basics

- Types of bonds
- Issuing procedures
- Trading
- Market value

Accounting for Bond Issues

- Issuing bonds at face value
- Discount or premium
- Issuing bonds at a discount
- Issuing bonds at a premium

Accounting for Bond Retirements

- Redeeming bonds at maturity
- Redeeming bonds before maturity
- Converting bonds into common stock

Accounting for Other Long-Term Liabilities

- Long-term notes payable
- Lease liabilities

Statement Presentation and Analysis

- Presentation
- Analysis

Bond Basics

Bonds are a form of interest-bearing notes payable.

Three **advantages** over common stock:

1. Stockholder control is not affected.
2. Tax savings result.
3. Earnings per share may be higher.

Bond Basics

Effects on earnings per share—stocks vs. bonds.

Illustration 15-2

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

Bond Basics

Question

The major disadvantages resulting from the use of bonds are:

- a. that interest is not tax deductible and the principal must be repaid.
- b. that the principal is tax deductible and interest must be paid.
- c. that neither interest nor principal is tax deductible.
- d** that interest must be paid and principal repaid.

Bond Basics

Types of Bonds

- Secured and Unsecured (debenture) bonds.
- Term and Serial bonds.
- Registered and Bearer (or coupon) bonds.
- Convertible and Callable bonds.

Bond Basics

Issuing Procedures

- Bond contract known as a **bond indenture**.
- Represents a promise to pay:
 - (1) sum of money at designated maturity date, plus
 - (2) periodic interest at a contractual (stated) rate on the maturity amount (face value).
- Paper certificate, typically a \$1,000 face value.
- Interest payments usually made semiannually.
- Generally issued when the amount of capital needed is too large for one lender to supply.

Bond Basics

Issuer of Bonds

Illustration 15-3



Maturity Date

Contractual Interest Rate

Face or Par Value

Bond Basics

Bond Trading

- Bonds traded on national securities exchanges.
- Newspapers and the financial press publish bond prices and trading activity daily.

Illustration 15-4

<u>Bonds</u>	<u>Maturity</u>	<u>Close</u>	<u>Yield</u>	<u>Est. Volume (000)</u>
Boeing Co. 5.125	Feb. 15, 2011	96.595	5.747	33,965

Read as: Outstanding 5.125%, \$1,000 bonds that mature in 2011. Currently yield a 5.747% return. On this day, \$33,965,000 of these bonds were traded. Closing price was 96.595% of face value, or \$965.95.

Bond Basics

Determining the Market Value of Bonds

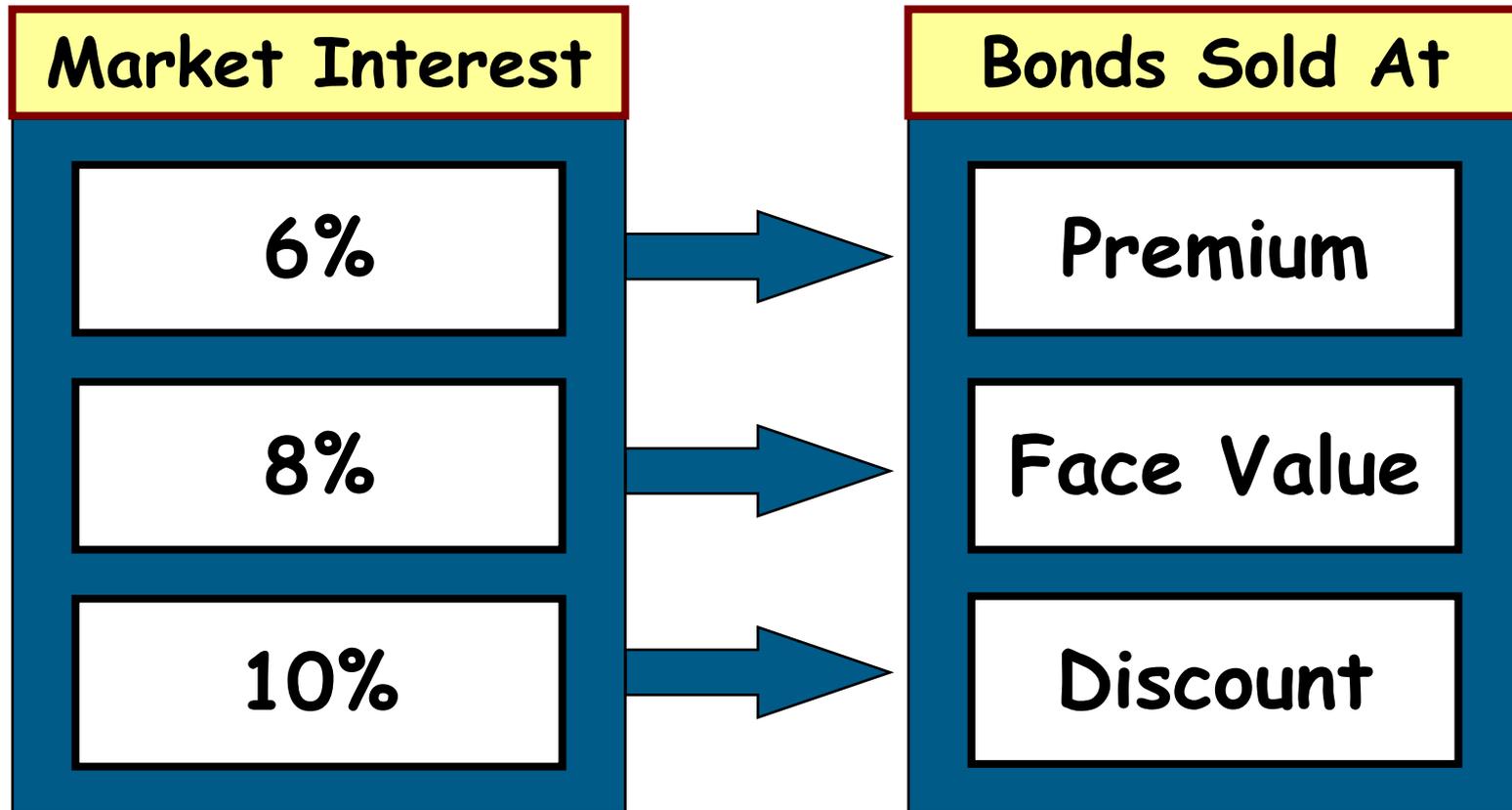
Market value is a function of the three factors that determine present value:

1. the dollar amounts to be received,
2. the length of time until the amounts are received,
and
3. the market rate of interest.

The features of a bond (callable, convertible, and so on) affect the market rate of the bond.

Accounting for Bond Issues

Assume Contractual Rate of 8%



Accounting for Bond Issues

Question

The rate of interest investors demand for loaning funds to a corporation is the:

- a. contractual interest rate.
- b. face value rate.
- c. market interest rate.
- d. stated interest rate.

Accounting for Bond Issues

Question

Karson Inc. issues 10-year bonds with a maturity value of \$200,000. If the bonds are issued at a premium, this indicates that:

- a. the contractual interest rate exceeds the market interest rate.
- b. the market interest rate exceeds the contractual interest rate.
- c. the contractual interest rate and the market interest rate are the same.
- d. no relationship exists between the two rates.

Issuing Bonds at Face Value

Illustration: On January 1, 2008, San Marcos HS issues \$100,000, three-year, 8% bonds at 100 (100% of face value). Interest is paid annually each Dec. 31.

Jan. 1	Cash	100,000	
	Bonds payable		100,000
Dec. 31	Interest expense	8,000	
	Cash		8,000

Issuing Bonds at a Discount

Illustration: On January 1, 2008, San Marcos HS issues \$100,000, three-year, 8% bonds for \$95,027 (95.027% of face value).

Jan. 1	Cash	95,027	
	Discount on bonds payable	4,973	
	Bonds payable		100,000

Issuing Bonds at a Discount

Statement Presentation

San Marcos HS Balance Sheet (partial)	
Long-term liabilities	
Bonds payable	\$ 100,000
Less: Discount on bonds payable	4,973
	<hr/>
	\$ 95,027
	<hr/> <hr/>

Issuing Bonds at a Discount

Question

Discount on Bonds Payable:

- a. has a credit balance.
- b.** is a contra account.
- c. is added to bonds payable on the balance sheet.
- d. increases over the term of the bonds.

Issuing Bonds at a Premium

Illustration: On January 1, 2008, San Marcos HS issues \$100,000, three-year, 8% bonds for \$105,346 (105.346% of face value).

Jan. 1	Cash	105,346	
	Premium on bonds payable		5,346
	Bonds payable		100,000

Issuing Bonds at a Discount

Statement Presentation

San Marcos HS Balance Sheet (partial)	
Long-term liabilities	
Bonds payable	\$ 100,000
Add: Premium on bonds payable	5,346
	<hr/>
	\$ 105,346
	<hr/> <hr/>

Issuing bonds at an amount different from face value is quite common. By the time a company prints the bond certificates and markets the bonds, it will be a coincidence if the market rate and the contractual rate are the same.

Accounting for Bond Retirements

Redeeming Bonds at Maturity

San Marcos HS records the redemption of its bonds at maturity as follows:

Bonds payable	100,000	
Cash		100,000

Accounting for Bond Retirements

Redeeming Bonds before Maturity

When a company retires bonds before maturity, it is necessary to:

1. eliminate the carrying value of the bonds at the redemption date;
2. record the cash paid; and
3. recognize the gain or loss on redemption.

The carrying value of the bonds is the face value of the bonds less unamortized bond discount or plus unamortized bond premium at the redemption date.

Accounting for Bond Retirements

Question

When bonds are redeemed before maturity, the gain or loss on redemption is the difference between the cash paid and the:

- a. carrying value of the bonds.
- b. face value of the bonds.
- c. original selling price of the bonds.
- d. maturity value of the bonds.

Accounting for Bond Retirements

Illustration: The San Marcos HS, 8% bonds of \$100,000 issued on Jan. 1, 2008, are recalled at 105 on Dec. 31, 2009. Assume that the carrying value of the bonds at the redemption date is \$98,183.

Journal entry at Dec. 31, 2009:

Bonds payable	100,000	
Loss on bond redemption	6,817	
Cash (\$100,000 × 105%)		105,000
Discount on bonds payable		1,817

Accounting for Bond Retirements

Converting Bonds into Common Stock

Until conversion, the bondholder receives interest on the bond.

For the issuer, the bonds sell at a higher price and pay a lower rate of interest than comparable debt securities without the conversion option.

Upon conversion, the company transfers the carrying value of the bonds to paid-in capital accounts. No gain or loss is recognized.

Accounting for Bond Retirements

E15-6 Nocioni Company issued \$1,000,000 of bonds on January 1, 2008.

Instructions: Prepare the journal entry to record the conversion of the bonds into 30,000 shares of \$10 par value common stock. Assume the bonds were issued at par.

Bonds payable	1,000,000	
Common stock (30,000 × \$10)		300,000
Paid-in capital in excess of par		700,000

Accounting for Bond Retirements

Question

When bonds are converted into common stock:

- a. a gain or loss is recognized.
- (b)** the carrying value of the bonds is transferred to paid-in capital accounts.
- c. the market price of the stock is considered in the entry.
- d. the market price of the bonds is transferred to paid-in capital.

Accounting for Other Long-Term Liabilities

Long-Term Notes Payable

- May be secured by a **mortgage** that pledges title to specific assets as security for a loan
- Typically, the terms require the borrower to make installment payments over the term of the loan. Each payment consists of
 1. interest on the unpaid balance of the loan and
 2. a reduction of loan principal.
- Companies initially record mortgage notes payable at face value.

Accounting for Other Long-Term Liabilities

Exercise: Tucki Co. receives \$240,000 when it issues a \$240,000, 10%, mortgage note payable to finance the construction of a building at December 31, 2008. The terms provide for semiannual installment payments of \$16,000 on June 30 and December 31. Prepare the journal entries to record the mortgage loan and the first installment payment.

Dec. 31	Cash	240,000	
	Mortgage notes payable		240,000

Jun. 30	Interest expense	12,000 *	
	Mortgage notes payable	4,000	
	Cash		16,000

* ($\$240,000 \times 10\% \times 6/12 = \$12,000$)

Accounting for Other Long-Term Liabilities

Question

Each payment on a mortgage note payable consists of:

- a. interest on the original balance of the loan.
- b. reduction of loan principal only.
- c. interest on the original balance of the loan and reduction of loan principal.
- d. interest on the unpaid balance of the loan and reduction of loan principal.

Accounting for Other Long-Term Liabilities

Lease Liabilities

A lease is a contractual arrangement between a lessor (owner of the property) and a lessee (renter of the property).

Operating lease



Lessor has substantially all of the benefits and risks of ownership

Capital lease



Lessee has substantially all of the benefits and risks of ownership

Illustration 15-13

Accounting for Other Long-Term Liabilities

The issue of how to report leases is the case of **substance versus form**. Although technically legal title may not pass, the benefits from the use of the property do.

Operating Lease

Journal Entry:

Rent expense	xxx	
Cash		xxx

Capital Lease

Journal Entry:

Leased equipment	xxx	
Lease liability		xxx

A lease that transfers substantially all of the benefits and risks of property ownership should be capitalized (only noncancellable leases may be capitalized).

Statement of Financial Accounting Standard No. 13,
"Accounting for Leases," 1976

Accounting for Other Long-Term Liabilities

To capitalize a lease, one or more of **four criteria** must be met:

1. Transfers ownership to the lessee.
2. Contains a bargain purchase option.
3. Lease term is equal to or greater than 75 percent of the estimated economic life of the leased property.
4. The present value of the minimum lease payments (excluding executory costs) equals or exceeds 90 percent of the fair value of the leased property.

Accounting for Other Long-Term Liabilities

Exercise: On January 1, 2008, Burke Corporation signed a 5-year noncancelable lease for a machine. The machine has an estimated useful life of 6 years and the present value of the lease payments is \$36,144, which is equal to the fair market value of the equipment. There is no transfer of ownership during the lease term, nor is there any bargain purchase option.

Instructions

- (a) What type of lease is this? Explain.
- (b) Prepare the journal entry to record the lease on January 1, 2008.

Accounting for Other Long-Term Liabilities

Exercise: (a) What type of lease is this? Explain.

Capitalization Criteria:

1. Transfer of ownership
2. Bargain purchase option
3. Lease term \Rightarrow 75% of economic life of leased property
4. Present value of minimum lease payments \Rightarrow 90% of FMV of property

Capital Lease?

\longrightarrow **NO**

\longrightarrow **NO**

$\left\{ \begin{array}{ll} \text{Lease term} & 5 \text{ yrs.} \\ \text{Economic life} & \underline{6 \text{ yrs.}} \\ & \underline{\underline{83.3\%}} \end{array} \right.$
YES

$\left\{ \begin{array}{l} \text{YES - PV and FMV} \\ \text{are the same.} \end{array} \right.$

Accounting for Other Long-Term Liabilities

Exercise: (b) Prepare the journal entry to record the lease on January 1, 2008.

Jan. 1	Leased asset - equipment	36,144	
	Lease liability		36,144

The portion of the lease liability expected to be paid in the next year is a current liability. The remainder is classified as a long-term liability.

Accounting for Other Long-Term Liabilities

Question

The lessee must record a lease as an asset if the lease:

- a. transfers ownership of the property to the lessor.
- b. contains any purchase option.
- c. term is 75% or more of the useful life of the leased property.
- d. payments equal or exceed 90% of the fair market value of the leased property.

Statement Analysis and Presentation

Presentation

Illustration 15-14

LAX CORPORATION

Balance Sheet (partial)

Long-term liabilities		
Bonds payable 10% due in 2015	\$1,000,000	
Less: Discount on bonds payable	<u>80,000</u>	\$ 920,000
Mortgage notes payable, 11%, due in 2021 and secured by plant assets		500,000
Lease liability		<u>440,000</u>
Total long-term liabilities		\$1,860,000

Statement Analysis and Presentation

Analysis of Long-Term Debt

Two ratios that provide information about debt-paying ability and long-run solvency are:

$$1. \quad \text{Debt to total assets} = \frac{\text{Total debt}}{\text{Total assets}}$$

The higher the percentage of debt to total assets, the greater the risk that the company may be unable to meet its maturing obligations.

Statement Analysis and Presentation

Analysis of Long-Term Debt

Two ratios that provide information about debt-paying ability and long-run solvency are:

$$2. \quad \text{Times interest earned} = \frac{\text{Income before income taxes and interest expense}}{\text{Interest expense}}$$

Indicates the company's ability to meet interest payments as they come due.

Present Value Concepts Related to Bond Pricing

To illustrate present value concepts, assume that you are willing to invest a sum of money that will yield \$1,000 at the end of one year, and you can earn 10% on your money. What is the \$1,000 worth **today**?

To compute the answer, divide the future amount by 1 plus the interest rate ($\$1,000/1.10 = \909.09).

$$\begin{aligned} \text{Present value} &= \$909.09 \\ \text{Present value} &= \$1,000 \div 1.10 \\ \text{Present value} \times (1 + 10\%) &= \$1,000 \\ \text{Present value} \times (1 + \text{interest rate}) &= \text{Future amount} \end{aligned}$$

Illustration 15A-1

Present Value Concepts Related to Bond Pricing

To illustrate present value concepts, assume that you are willing to invest a sum of money that will yield \$1,000 at the end of one year, and you can earn 10% on your money. What is the \$1,000 worth **today**?

To compute the answer, divide the future amount by 1 plus the interest rate ($\$1,000/1.10 = \909.09 **or** use a Present Value of 1 table. ($\$1,000 \times .90909$) = \$909.09 (10% per period, one period from now)

Illustration 15A-1

Periods (n)	4%	5%	6%	8%	9%	10%	11%	15%	20%
1	.96154	.95181	.94339	.92593	.92354	.90909	.90090	.85734	.83333
2	.92456	.90703	.89000	.85421	.85001	.82645	.81928	.75614	.75189
3	.88901	.87144	.85498	.81928	.81512	.79383	.78712	.72943	.72617
4	.85480	.83713	.82078	.78426	.78000	.75991	.75361	.69848	.69531
5	.82188	.80411	.78777	.75000	.74573	.72642	.72050	.67165	.66875

TABLE 15A-1
Present Value of 1

Present Value Concepts Related to Bond Pricing

The **selling price** of a bond is equal to the **sum of two items**:

1) The present value of the face value of the bond discounted at the investor's required rate of return

PLUS

2) The present value of the periodic interest payments discounted at the investor's required rate of return

Present Value Concepts Related to Bond Pricing

Assume 10%, 5-year bonds with a face value of \$100,000 are sold and the investor's required rate of return is 10%. Interest payments are made semiannually.

Illustration 15A-8

Diagram
for
Principal

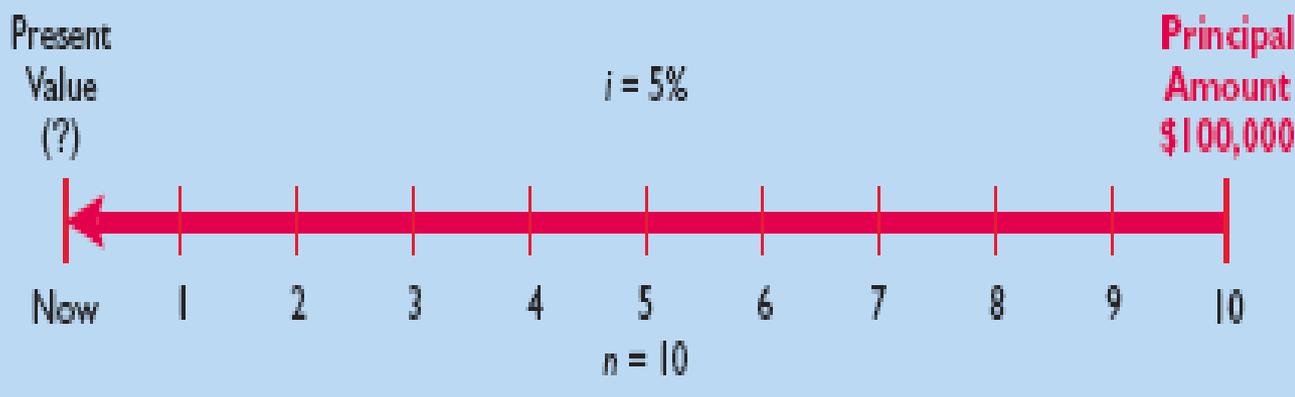
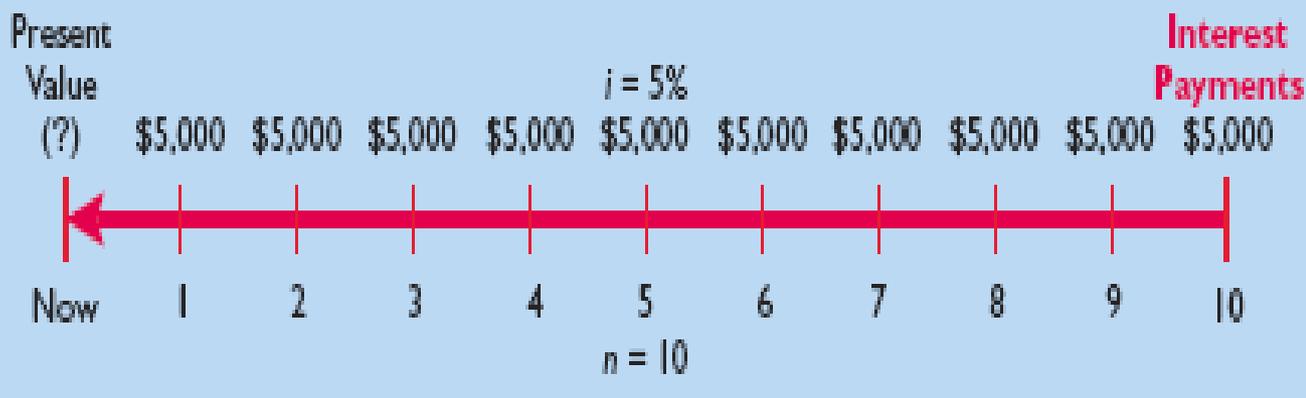


Diagram
for
Interest



Present Value Concepts Related to Bond Pricing

Assume 10%, 5-year bonds with a face value of \$100,000 are sold and the investor's required rate of return is 12%. Interest is paid semiannually.

Illustration 15A-10

10% Contractual Rate—12% Discount Rate

Present value of principal to be received at maturity	
$\$100,000 \times .55839$ (Table 15A-1)	\$55,839
Present value of interest to be received periodically over the term of the bonds	
$\$5,000 \times 7.36009$ (Table 15A-2)	36,800
Present value of bonds	<u><u>\$92,639</u></u>

The .55839 factor is from the present value of 1 table for 10 periods at 6% per period. The 7.36009 factor is from the present value of an annuity table for 10 periods at 6% per period.

Effective-Interest Method of Bond Amortization

Under the effective-interest method, the amortization of bond discount or bond premium results in period interest expense equal to a constant percentage of the carrying value of the bonds. The follow steps are required under the effective-interest method.

1. Compute the **bond interest expense**.
2. Compute the **bond interest paid or accrued**.
3. Compute the **amortization amount**.

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

Effective-Interest Method of Bond Amortization

Assume on January 1, 2008, 10%, 5 year bonds with a face value of \$100,000, are sold for \$92,639, resulting in an effective interest rate of 12%. Interest is paid semiannually. This results in a discount of \$7,361. The cash paid each period equals $\$100,000 \times 5\% = \$5,000$. Interest expense the first period = $\$92,639 \times 6\% = \$5,558$. This results in a discount amortization of \$558.

Illustration 15B-2

Semiannual Interest Periods	(A) Interest to Be Paid ($5\% \times \$100,000$)	(B) Interest Expense to Be Recorded ($6\% \times$ Preceding Bond Carrying Value)	(C) Discount Amortization (B) - (A)	(D) Unamortized Discount (D) - (C)	(E) Bond Carrying Value ($\$100,000 -$ D)
Issue date				\$7,361	\$92,639
1	\$ 5,000	\$ 5,558 ($6\% \times \$92,639$)	\$ 558	6,803	93,197

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

Effective-Interest Method of Bond Amortization

Assume on January 1, 2008, 10%, 5 year bonds with a face value of \$100,000, are sold for \$92,639, resulting in an effective interest rate of 12%. Assume interest is paid semiannually. This results in a discount of \$7,361. The cash paid each period equals $\$100,000 \times 5\% = \$5,000$. Interest expense the first period = $\$92,639 \times 6\% = \$5,558$. This results in a discount amortization of \$558.

The journal entry on July 1, 2008, to record the interest payment and amortization of discount is as follows:

July 1	Interest Expense	5,558	
	Cash		5,000
	Discount on Bonds Payable		558

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

Straight-line Method of Bond Amortization

Assume on January 1, 2008, 10%, 5 year bonds with a face value of \$100,000, are sold for \$92,639, resulting in an effective interest rate of 12%. Interest is paid semiannually. This results in a discount of \$7,361. The cash paid each period equals $\$100,000 \times 5\% = \$5,000$. The discount to be amortized each period is $\$7,361/10 \text{ periods} = \736 per period. Therefore Interest Expense each period will be $\$5,000 + \$736 = \$5,736$.

The journal entry on July 1, 2008, to record the interest payment and amortization of discount is as follows:

July 1	Interest Expense	5,736	
	Cash		5,000
	Discount on Bonds Payable		736

LO 9 Apply the straight-line method of amortizing bond discount and bond premium.

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 16

INVESTMENTS

Accounting Principles, Eighth Edition

Study Objectives

1. Discuss why corporations invest in debt and stock securities.
2. Explain the accounting for debt investments.
3. Explain the accounting for stock investments.
4. Describe the use of consolidated financial statements.
5. Indicate how debt and stock investments are reported in financial statements.
6. Distinguish between short-term and long-term investments.

Long-Term Liabilities

Why Corporations Invest

- Cash management
- Investment income
- Strategic reasons

Accounting for Debt Investments

- Recording acquisition of bonds
- Recording bond interest
- Recording sale of bonds

Accounting for Stock Investments

- Holdings of less than 20%
- Holdings between 20% and 50%
- Holdings of more than 50%

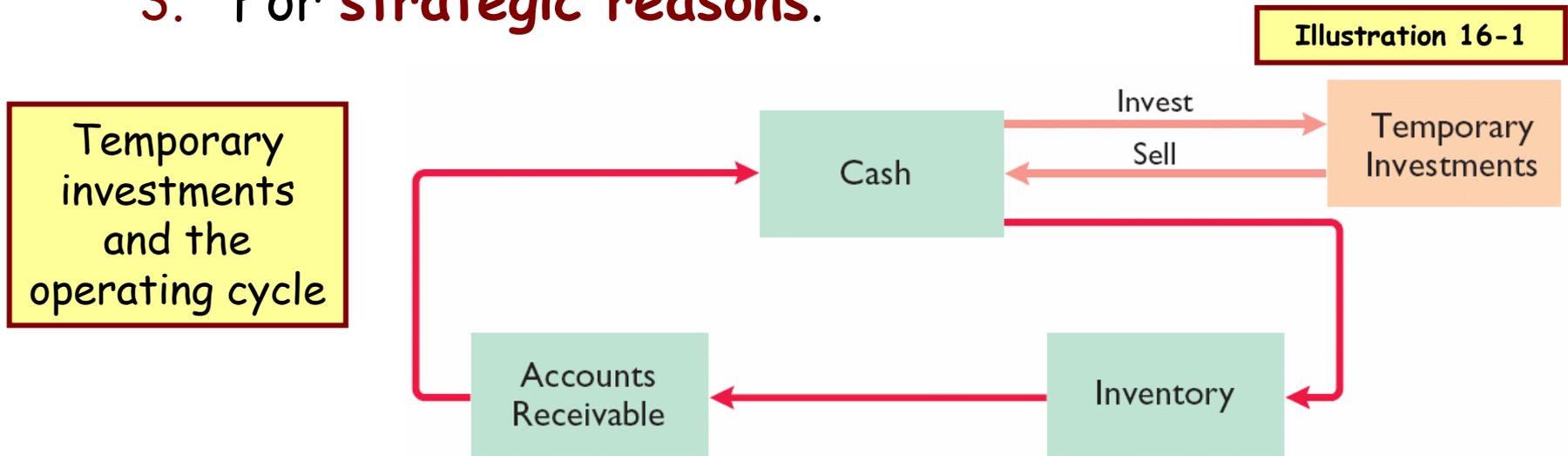
Valuing and Reporting Investments

- Categories of securities
- Balance sheet presentation
- Realized and unrealized gain or loss
- Classified balance sheet

Why Corporations Invest

Corporations generally invest in debt or stock securities for one of three reasons.

1. Corporation may **have excess cash**.
2. To generate **earnings from investment income**.
3. For **strategic reasons**.



Why Corporations Invest

Question

Pension funds and banks regularly invest in debt and stock securities to:

- a. house excess cash until needed.
- b** generate earnings.
- c. meet strategic goals.
- d. avoid a takeover by disgruntled investors.

Accounting for Debt Instruments

Recording Acquisition of Bonds

Cost includes all expenditures necessary to acquire these investments, such as the price paid plus brokerage fees (commissions), if any.

Recording Bond Interest

Calculate and record interest revenue based upon the carrying value of the bond times the interest rate times the portion of the year the bond is outstanding.

Accounting for Debt Instruments

Sale of Bonds

Credit the investment account for the cost of the bonds and record as a gain or loss any difference between the net proceeds from the sale (sales price less brokerage fees) and the cost of the bonds.

Accounting for Debt Instruments

Exercise: Issel Corporation had the following transactions pertaining to debt investments.

Jan. 1 Purchased 60, 8%, \$1,000 Hollis Co. bonds for \$60,000 cash plus brokerage fees of \$900. Interest is payable semiannually on July 1 and January 1.

July 1 Received semiannual interest on Hollis Co. bonds.

July 1 Sold 30 Hollis Co. bonds for \$34,000 less \$500 brokerage fees.

Instructions (a) Journalize the transactions. (b) Prepare the adjusting entry for the accrual of interest at December 31.

Accounting for Debt Instruments

Exercise: Jan. 1 Purchased 60, 8%, \$1,000 Hollis Co. bonds for \$60,000 cash plus brokerage fees of \$900. Interest is payable semiannually on July 1 and January 1.

Jan 1	Debt investment	60,900 *	
	Cash		60,900

* ($\$60,000 + \$900 = \$60,900$)

Accounting for Debt Instruments

Exercise: July 1 Received semiannual interest on Hollis Co. bonds. Sold 30 Hollis Co. bonds for \$34,000 less \$500 brokerage fees.

July 1	Cash	2,400	*
	Interest revenue		2,400
	Cash	33,500	**
	Debt investments		30,450 ***
	Gain on sale		3,050

* $(\$60,000 \times 8\% \times \frac{1}{2} = \$2,400)$

*** $(\$60,900 \times \frac{1}{2} = \$30,450)$

** $(\$34,000 - \$500 = \$33,500)$

Accounting for Debt Instruments

Exercise: (b) Prepare the adjusting entry for the accrual of interest at December 31.

Dec 31	Interest receivable	1,200 *	
	Interest revenue		1,200

* $(\$30,000 \times 8\% \times \frac{1}{2} = \$1,200)$

Accounting for Debt Instruments

Question

An event related to an investment in debt securities that does not require a journal entry is:

- a. acquisition of the debt investment.
- b. receipt of interest revenue from the debt investment.
- c. a change in the name of the firm issuing the debt securities.
- d. sale of the debt investment.

Accounting for Debt Instruments

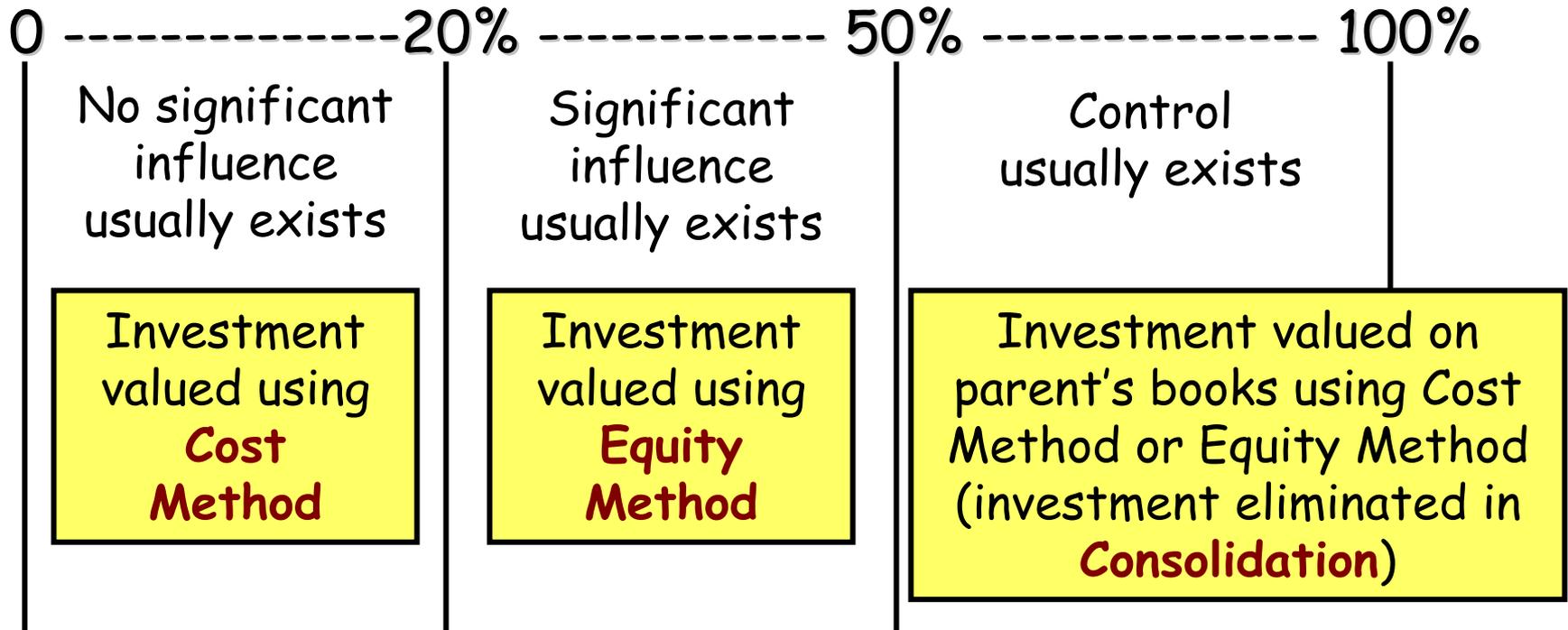
Question

When bonds are sold, the gain or loss on sale is the difference between the:

- a. sales price and the cost of the bonds.
- b. net proceeds and the cost of the bonds.
- c. sales price and the market value of the bonds.
- d. net proceeds and the market value of the bonds.

Accounting for Stock Investments

Ownership Percentages



The accounting depends on the extent of the **investor's influence** over the operating and financial affairs of the issuing corporation.

Holdings of Less than 20%

Companies use the **cost method**. Under the cost method, companies record the investment at cost, and recognize revenue only when cash dividends are received.

Cost includes all expenditures necessary to acquire these investments, such as the price paid plus any brokerage fees (commissions).

Holdings of Less than 20%

Exercise: Dossett Company had the following transactions pertaining to stock investments.

Feb. 1 Purchased 800 shares of Hippo common stock (2%) for \$8,000 cash, plus brokerage fees of \$200.

July 1 Received cash dividends of \$1 per share on Hippo common stock.

Sept. 1 Sold 300 shares of Hippo common stock for \$4,400, less brokerage fees of \$100.

Instructions

Journalize the transactions.

Holdings of Less than 20%

Exercise: **Feb. 1** Purchased 800 shares of Hippo common stock (2%) for \$8,000 cash, plus brokerage fees of \$200. **July 1** Received cash dividends of \$1 per share on Hippo common stock.

Feb. 1	Stock investments	8,200 *	
	Cash		8,200

July 1	Cash	800 **	
	Dividend revenue		800

* ($\$8,000 + \$200 = \$8,200$)

** ($800 \times \$1 = \800)

Holdings of Less than 20%

Exercise: Sept. 1 Sold 300 shares of Hippo common stock for \$4,400, less brokerage fees of \$100.

Sept. 1	Stock investments	4,300 *	
	Cash		3,075 **
	Gain on sale		1,225

* ($\$4,400 - \$100 = \$4,300$)

** ($\$8,200 \times 3/8 = \$3,075$)

Holdings Between 20% and 50%

Equity Method

Record the investment at cost and subsequently adjust the amount each period for

- the investor's proportionate share of the earnings (losses) and
- dividends received by the investor.

If investor's share of investee's losses exceeds the carrying amount of the investment, the investor ordinarily should discontinue applying the equity method.

Holdings Between 20% and 50%

Question

Under the equity method, the investor records dividends received by crediting:

- a. Dividend Revenue.
- b. Investment Income.
- c. Revenue from Investment.
- d. Stock Investments.

Holdings Between 20% and 50%

Exercise: (Equity Method) On January 1, 2008, Pennington Corporation purchased 30% of the common shares of Edwards Company for \$180,000. During the year, Edwards earned net income of \$80,000 and paid dividends of \$20,000.

Instructions

Prepare the entries for Pennington to record the purchase and any additional entries related to this investment in Edwards Company in 2008.

Holdings Between 20% and 50%

Exercise: Pennington purchased 30% of the common shares of Edwards for \$180,000. Edwards earned net income of \$80,000 and paid dividends of \$20,000.

Stock investments	180,000	
Cash		180,000

Stock investments	24,000	
Investment revenue	(\$80,000 × 30%)	24,000

Cash	6,000	
Stock investments	(\$20,000 × 30%)	6,000

Holdings Between 20% and 50%

Exercise: Pennington purchased 30% of the common shares of Edwards for \$180,000. Edwards earned net income of \$80,000 and paid dividends of \$20,000.

After Pennington posts the transactions for the year, its investment and revenue accounts will show the following.

Stock Investments		Investment Revenue	
Debit	Credit	Debit	Credit
180,000			24,000
24,000	6,000		
198,000			

Holdings of More Than 50%

Controlling Interest - When one corporation acquires a voting interest of more than 50 percent in another corporation

- Investor is referred to as the **parent**.
- Investee is referred to as the **subsidiary**.
- Investment in the subsidiary is reported on the parent's books as a long-term investment.
- Parent generally prepares **consolidated financial statements**.

Valuing and Reporting Investments

Categories of Securities

Companies classify debt and stock investments into three categories:

- **Trading securities**
- **Available-for-sale securities**
- **Held-to-maturity securities**

These guidelines apply to all debt securities and all stock investments in which the holdings are less than 20%.

Valuing and Reporting Investments

Trading Securities

- Companies hold trading securities with the intention of selling them in a short period.
- *Trading* means frequent buying and selling.
- Companies report trading securities at fair value, and report changes from cost as part of net income.

Valuing and Reporting Investments

Available-for-Sale Securities

- Companies hold available-for-sale securities with the intent of selling these investments sometime in the future.
- These securities can be classified as current assets or as long-term assets, depending on the intent of management.
- Companies report securities at fair value, and report changes from cost as a component of the stockholders' equity section.

Valuing and Reporting Investments

Question

Marketable securities bought and held primarily for sale in the near term are classified as:

- a. available-for-sale securities.
- b. held-to-maturity securities.
- c. stock securities.
- d. trading securities

Trading Securities

Problem: Loxley Company has the following portfolio of securities at September 30, 2008, its last reporting date.

Trading Securities	Cost	Fair Value
Dan Fogelberg, Inc. common (5,000 shares)	\$ 225,000	\$ 200,000
Petra, Inc. preferred (3,500 shares)	133,000	140,000
Tim Weisberg Corp. common (1,000 shares)	180,000	179,000

On Oct. 10, 2008, the Fogelberg shares were sold at a price of \$54 per share. In addition, 3,000 shares of Los Tigres common stock were acquired at \$59.50 per share on Nov. 2, 2008. The Dec. 31, 2008, fair values were: Petra \$96,000, Los Tigres \$132,000, and the Weisberg common \$193,000.

Trading Securities

Problem: Prepare the journal entries to record the sale, purchase, and adjusting entries related to the **trading securities** in the last quarter of 2008.

Portfolio at September 30, 2008

Trading Securities	Cost	Fair Value
Dan Fogelberg, Inc. common (5,000 shares)	\$ 225,000	\$ 200,000
Petra, Inc. preferred (3,500 shares)	133,000	140,000
Tim Weisberg Corp. common (1,000 shares)	180,000	179,000
	<u>\$ 538,000</u>	<u>\$ 519,000</u>

Market Adjustment - Trading (account balance) **(\$19,000)**

Trading Securities

Problem: On Oct. 10, the Fogelberg shares were sold at a \$54 per share. In addition, 3,000 shares of Los Tigres common stock were acquired at \$59.50 per share on Nov. 2.

October 10, 2008 (Fogelberg):

Cash (5,000 × \$54)	270,000	
Trading securities		225,000
Gain on sale		45,000

November 2, 2008 (Los Tigres):

Trading securities (3,000 × \$59.50)	178,500	
Cash		178,500

Trading Securities

Problem: Portfolio at December 31, 2008

Trading Securities	Cost	Fair Value	Unrealized Gain (Loss)
Petra, Inc. preferred	\$ 133,000	\$ 96,000	\$ (37,000)
Tim Weisberg Corp. common	180,000	193,000	13,000
Los Tigres common	178,500	132,000	(46,500)
	<u>\$ 491,500</u>	<u>\$ 421,000</u>	<u>(70,500)</u>
Prior market adjustment balance			(19,000)
Market fair value adjustment			<u>\$ (51,500)</u>

December 31, 2008:

Unrealized loss - Income

51,500

Market adjustment - Trading

51,500

Available-for-Sale Securities

Problem: How would the entries change if the securities were classified as **available-for-sale**?

The entries would be the same except that the

- Unrealized Gain or Loss—Equity account is used instead of Unrealized Gain or Loss—Income.
- The unrealized loss would be deducted from the stockholders' equity section rather than charged to the income statement.

Available-for-Sale Securities

Question

An unrealized loss on available-for-sale securities is:

- a. reported under Other Expenses and Losses in the income statement.
- b. closed-out at the end of the accounting period.
- c. reported as a separate component of stockholders' equity.
- d. deducted from the cost of the investment.

Balance Sheet Presentation

Short-Term Investments

Also called **marketable securities**, are securities held by a company that are

- (1) readily marketable and
- (2) intended to be converted into cash within the next year or operating cycle, whichever is longer.

Investments that do not meet both criteria are classified as **long-term investments**.

Balance Sheet Presentation

Presentation of Realized and Unrealized Gain or Loss

Nonoperating items related to investments

Illustration 16-10

Other Revenue and Gains

Interest Revenue
Dividend Revenue
Gain on Sale of Investments
Unrealized Gain—Income

Other Expenses and Losses

Loss on Sale of Investments
Unrealized Loss—Income

Balance Sheet Presentation

Realized and Unrealized Gain or Loss

Unrealized gain or loss on available-for-sale securities are reported as a separate component of stockholders' equity.

Illustration 16-11

DAWSON INC. Balance Sheet (partial)	
Stockholders' equity	
Common stock	\$3,000,000
Retained earnings	<u>1,500,000</u>
Total paid-in capital and retained earnings	4,500,000
Less: Unrealized loss on available-for-sale securities	<u>(100,000)</u>
Total stockholders' equity	<u><u>\$4,400,000</u></u>

Balance Sheet Presentation

Classified Balance Sheet (partial)

Illustration 16-12

Balance Sheet December 31, 2008		
	<u>Assets</u>	
Current assets		
Cash		\$ 21,000
Short-term investments, at fair value		147,000
Accounts receivable	\$ 84,000	
Less: Allowance for doubtful accounts	4,000	80,000
Merchandise inventory, at FIFO cost		43,000
Prepaid insurance		23,000
Total current assets		314,000
Investments		
Investments in stock of less than 20% owned companies, at fair value	50,000	
Investment in stock of 20–50% owned company, at equity	150,000	
Total investments		200,000
Property, plant, and equipment		

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Weygandt • Kieso • Kimmel



Accounting Principles

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CHAPTER 17

STATEMENT OF CASH FLOWS

Accounting Principles, Eighth Edition

Study Objectives

1. Indicate the usefulness of the statement of cash flows.
2. Distinguish among operating, investing, and financing activities.
3. Prepare a statement of cash flows using the indirect method.
4. Analyze the statement of cash flows.

Statement of Cash Flows

The Statement of Cash Flows: Usefulness and Format

- Usefulness
- Classifications
- Significant noncash activities
- Format
- Preparation
- Indirect and direct methods

Preparing the Statement of Cash Flows—Indirect Method

- Step 1: Operating activities
- Step 2: Investing and financing activities
- Step 3: Net change in cash

Using Cash Flows to Evaluate a Company

- Free cash flow

Usefulness of the Statement of Cash Flows

Provides information to help assess:

1. Entity's ability to generate future cash flows.
2. Entity's ability to pay dividends and obligations.
3. Reasons for difference between net income and net cash provided (used) by operating activities.
4. Cash investing and financing transactions during the period.

Classification of Cash Flows

Operating Activities

Income
Statement
Items

Investing Activities

Generally
Long-Term
Asset Items

Financing Activities

Generally
Long-Term
Liability
and
Equity Items

Classification of Cash Flows

Classification of Typical Inflows and Outflows

Illustration 17-1

Operating activities - Income statement items

Cash inflows:

From sale of goods or services.

From interest received and dividends received.

Cash outflows:

To suppliers for inventory.

To employees for services.

To government for taxes.

To lenders for interest.

To others for expenses.

Classification of Cash Flows

Classification of Typical Inflows and Outflows

Illustration 17-1

Investing activities - Changes in investments and long-term assets

Cash inflows:

From sale of property, plant, and equipment.

From sale of investments in debt or equity securities.

From collection of principal on loans to other entities.

Cash outflows:

To purchase property, plant, and equipment.

To purchase investments in debt or equity securities.

To make loans to other entities.

Classification of Cash Flows

Classification of Typical Inflows and Outflows

Illustration 17-1

Financing activities - Changes in long-term liabilities and stockholders' equity

Cash inflows:

From sale of common stock.

From issuance of long-term debt (bonds and notes).

Cash outflows:

To stockholders as dividends.

To redeem long-term debt or reacquire capital stock (treasury stock).

Classification of Cash Flows

Significant Noncash Activities

1. Issuance of common stock to purchase assets.
2. Conversion of bonds into common stock.
3. Issuance of debt to purchase assets.
4. Exchanges of plant assets.

Companies report these activities in either a **separate schedule** at the bottom of the statement of cash flows or in a **separate note** or supplementary schedule to the financial statements.

Format of the Statement of Cash Flows

Order of Presentation:

1. Operating activities.
2. Investing activities.
3. Financing activities.

Direct Method

Indirect Method

The cash flows from operating activities section always appears first, followed by the investing and financing sections.

Format of the Statement of Cash Flows

COMPANY NAME
Statement of Cash Flows
Period Covered

Illustration 17-2

Cash flows from operating activities

(List of individual items)

XX

Net cash provided (used) by operating activities

XXX

Cash flows from investing activities

(List of individual inflows and outflows)

XX

Net cash provided (used) by investing activities

XXX

Cash flows from financing activities

(List of individual inflows and outflows)

XX

Net cash provided (used) by financing activities

XXX

Net increase (decrease) in cash

XXX

Cash at beginning of period

XXX

Cash at end of period

XXX

Noncash investing and financing activities

(List of individual noncash transactions)

XXX

Preparing the Statement of Cash Flows

Three Sources of Information:

1. Comparative balance sheets
2. Current income statement
3. Additional information

Three Major Steps:

Illustration 17-3

Step 1: Determine net cash provided/used by operating activities by converting net income from an accrual basis to a cash basis.



This step involves analyzing not only the current year's income statement but also comparative balance sheets and selected additional data.

Preparing the Statement of Cash Flows

Three Major Steps:

Illustration 17-3

Step 2: Analyze changes in noncurrent asset and liability accounts and record as investing and financing activities, or disclose as noncash transactions.



This step involves analyzing comparative balance sheet data and selected additional information for their effects on cash.

Step 3: Compare the net change in cash on the statement of cash flows with the change in the cash account reported on the balance sheet to make sure the amounts agree.



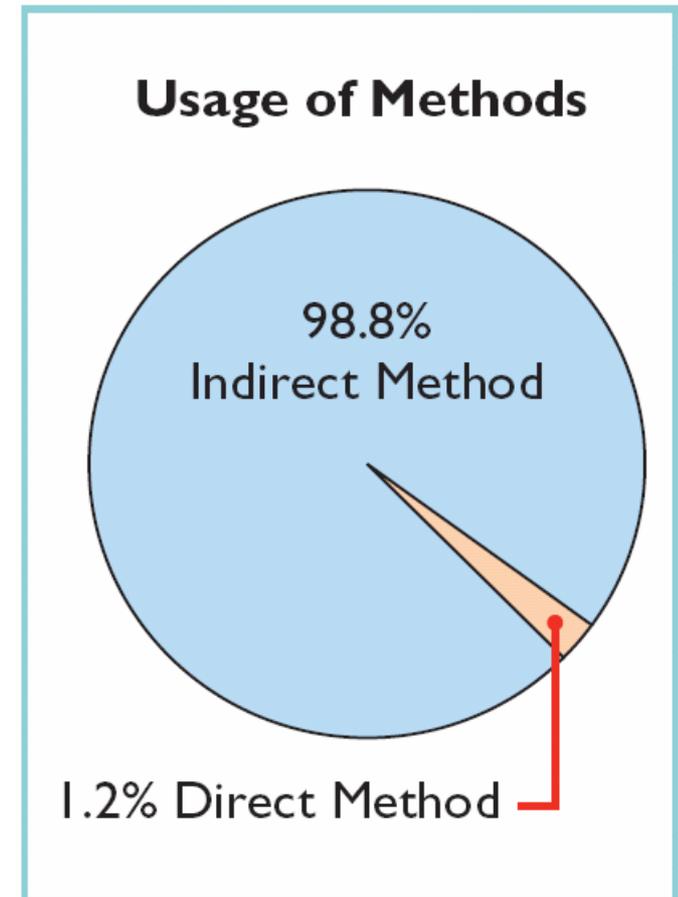
The difference between the beginning and ending cash balances can be easily computed from comparative balance sheets.

Preparing the Statement of Cash Flows

Indirect and Direct Methods

Companies favor the indirect method for two reasons:

1. It is easier and less costly to prepare, and
2. It focuses on the differences between net income and net cash flow from operating activities.



Preparing the Statement of Cash Flows

Indirect
Method

COMPUTER SERVICES COMPANY

Income Statement
For the Year Ended December 31, 2008

Demonstration
Problem

Revenues		\$507,000
Cost of goods sold	\$150,000	
Operating expenses (excluding depreciation)	111,000	
Depreciation expense	9,000	
Loss on sale of equipment	3,000	
Interest expense	<u>42,000</u>	<u>315,000</u>
Income before income tax		192,000
Income tax expense		<u>47,000</u>
Net income		<u><u>\$145,000</u></u>

Illustration 17-4

Preparing the Statement of Cash Flows

Indirect
Method

COMPUTER SERVICES COMPANY

Comparative Balance Sheets
December 31

Demonstration
Problem

Illustration 17-4

<u>Assets</u>	<u>2008</u>	<u>2007</u>	<u>Change in Account Balance Increase/Decrease</u>
Current assets			
Cash	\$ 55,000	\$ 33,000	\$ 22,000 Increase
Accounts receivable	20,000	30,000	10,000 Decrease
Merchandise inventory	15,000	10,000	5,000 Increase
Prepaid expenses	5,000	1,000	4,000 Increase
Property, plant, and equipment			
Land	130,000	20,000	110,000 Increase
Building	160,000	40,000	120,000 Increase
Accumulated depreciation—building	(11,000)	(5,000)	6,000 Increase
Equipment	27,000	10,000	17,000 Increase
Accumulated depreciation—equipment	(3,000)	(1,000)	2,000 Increase
Total assets	<u>\$398,000</u>	<u>\$138,000</u>	

Preparing the Statement of Cash Flows

Demonstration Problem

Liabilities and Stockholders' Equity

Current liabilities			
Accounts payable	\$ 28,000	\$ 12,000	\$ 16,000 Increase
Income tax payable	6,000	8,000	2,000 Decrease
Long-term liabilities			
Bonds payable	130,000	20,000	110,000 Increase
Stockholders' equity			
Common stock	70,000	50,000	20,000 Increase
Retained earnings	164,000	48,000	116,000 Increase
Total liabilities and stockholders' equity	<u>\$398,000</u>	<u>\$138,000</u>	

Additional information for 2008:

Illustration 17-4

1. The company declared and paid a \$29,000 cash dividend.
2. Issued \$110,000 of long-term bonds in direct exchange for land.
3. A building costing \$120,000 and equipment costing \$25,000 were purchased for cash.
4. The company sold equipment with a book value of \$7,000 (cost \$8,000, less accumulated depreciation \$1,000) for \$4,000 cash.
5. Issued common stock for \$20,000 cash.
6. Depreciation expense was comprised of \$6,000 for building and \$3,000 for equipment.

Preparing the Statement of Cash Flows - Indirect Method

Step 1: Operating Activities

Determine net cash provided/used by operating activities by converting net income from an accrual basis to a cash basis.

Common adjustments to Net Income (Loss):

- Add back non-cash expenses (depreciation and amortization expense).
- Deduct gains and add losses.
- Changes in current assets and current liabilities.

Step 1: Operating Activities

Question

Which is an example of a cash flow from an operating activity?

- a. Payment of cash to lenders for interest.
- b. Receipt of cash from the sale of capital stock.
- c. Payment of cash dividends to the company's stockholders.
- d. None of the above.

Step 1: Operating Activities

Depreciation Expense

Although depreciation expense reduces net income, it does not reduce cash. Depreciation is a noncash charge. The company must add it back to net income.

Illustration 17-6

Cash flows from operating activities:

Net income	\$ 145,000
------------	------------

Adjustments to reconcile net income to net cash provided by operating activities:

Depreciation expense	9,000
-----------------------------	--------------

Net cash provided by operating activities	<u>\$ 154,000</u>
---	-------------------

Operating Activities

Loss on Sale of Equipment

Because companies report as a source of cash in the investing activities section the actual amount of cash received from the sale:

- Any **loss** on sale is **added** to net income in the operating section.
- Any **gain** on sale is **deducted** from net income in the operating section.

Operating Activities

Loss on Sale of Equipment

Illustration 17-7

Cash flows from operating activities:

Net income

\$ 145,000

Adjustments to reconcile net income to net cash
provided by operating activities:

Depreciation expense

9,000

Loss on sale of equipment

3,000

Net cash provided by operating activities

\$ 157,000

Operating Activities

Changes to Noncash Current Asset Accounts

When the **Accounts Receivable** balance **decreases**, cash receipts are higher than revenue earned under the accrual basis.

Illustration 17-8

Accounts Receivable			
1/1/08	Balance	30,000	Receipts from customers 517,000
	Revenues	507,000	
12/31/08	Balance	20,000	

Therefore, the company adds to net income the amount of the decrease in accounts receivable.

Operating Activities

Changes to Noncash Current Asset Accounts

Illustration 17-9

Cash flows from operating activities:

Net income	\$ 145,000
------------	------------

Adjustments to reconcile net income to net cash provided by operating activities:

Depreciation expense	9,000
----------------------	-------

Loss on sale of equipment	3,000
---------------------------	-------

Decrease in accounts receivable	10,000
--	---------------

Net cash provided by operating activities	<u>\$ 167,000</u>
---	-------------------

Operating Activities

Changes to Noncash Current Asset Accounts

When the **Inventory** balance **increases**, the cost of merchandise purchased exceeds the cost of goods sold.

Merchandise Inventory				
1/1/08	Balance	10,000	Cost of goods sold	150,000
	Purchases	155,000		
12/31/08	Balance	15,000		

As a result, cost of goods sold does not reflect cash payments made for merchandise. The company deducts from net income this inventory increase.

Operating Activities

Changes to Noncash Current Asset Accounts

Illustration 17-9

Cash flows from operating activities:

Net income	\$ 145,000
------------	------------

Adjustments to reconcile net income to net cash provided by operating activities:

Depreciation expense	9,000
----------------------	-------

Loss on sale of equipment	3,000
---------------------------	-------

Decrease in accounts receivable	10,000
---------------------------------	--------

Increase in inventory	(5,000)
------------------------------	----------------

Net cash provided by operating activities	<u>\$ 162,000</u>
---	-------------------

Operating Activities

Changes to Noncash Current Asset Accounts

When the **Prepaid Expense** balance **increases**, cash paid for expenses is higher than expenses reported on an accrual basis. The company deducts the decrease from net income to arrive at net cash provided by operating activities.

If **prepaid expenses decrease**, reported expenses are higher than the expenses paid.

Operating Activities

Changes to Noncash Current Asset Accounts

Illustration 17-9

Cash flows from operating activities:

Net income \$ 145,000

Adjustments to reconcile net income to net cash
provided by operating activities:

Depreciation expense 9,000

Loss on sale of equipment 3,000

Decrease in accounts receivable 10,000

Increase in inventory (5,000)

Increase in prepaid expenses (4,000)

Net cash provided by operating activities \$ 158,000

Operating Activities

Changes to Noncash Current Liability Accounts

When **Accounts Payable increases**, this means the company received more in goods than it actually paid for. The increase is added to net income to determine net cash provided by operating activities.

When **Income Tax Payable decreases**, this means the income tax expense reported on the income statement was less than the amount of taxes paid during the period. The decrease is subtracted from net income to determine net cash provided by operating activities.

Operating Activities

Changes to Noncash Current Liability Accounts

Illustration 17-10

Cash flows from operating activities:

Net income	\$ 145,000
Adjustments to reconcile net income to net cash provided by operating activities:	
Depreciation expense	9,000
Loss on sale of equipment	3,000
Decrease in accounts receivable	10,000
Increase in inventory	(5,000)
Increase in prepaid expenses	(4,000)
Increase in accounts payable	16,000
Decrease in income taxes payable	(2,000)
Net cash provided by operating activities	<u>\$ 172,000</u>

Operating Activities

Summary of Conversion to Net Cash Provided by Operating Activities—Indirect Method

Illustration 17-11

Adjustment Required to Convert Net Income to Net Cash Provided by Operating Activities

Noncash Charges	Depreciation expense	Add
	Patent amortization expense	Add
	Depletion expense	Add
Gains and Losses	Loss on sale of plant asset	Add
	Gain on sale of plant asset	Deduct
Changes in Current Assets and Current Liabilities	Increase in current asset account	Deduct
	Decrease in current asset account	Add
	Increase in current liability account	Add
	Decrease in current liability account	Deduct

Step 2: Investing and Financing Activities

From the additional information, the company purchased **land** of \$110,000 by issuing **long-term bonds**. This is a significant noncash investing and financing activity that merits disclosure in a separate schedule.

Land			
1/1/08	Balance	20,000	
	Issued bonds	110,000	
12/31/08	Balance	130,000	

Bonds Payable			
	1/1/08	Balance	20,000
		For land	110,000
	12/31/08	Balance	130,000

Investing and Financing Activities

Illustration 17-13

Partial statement

Net cash provided by operating activities	<u>172,000</u>
Cash flows from investing activities:	
Purchase of building	(120,000)
Purchase of equipment	(25,000)
Sale of equipment	4,000
Net cash used by investing activities	<u>(141,000)</u>
Cash flows from financing activities:	
Issuance of common stock	20,000
Payment of cash dividends	(29,000)
Net cash used by financing activities	<u>(9,000)</u>
Net increase in cash	22,000
Cash at beginning of period	33,000
Cash at end of period	<u><u>\$ 55,000</u></u>
Disclosure: Issuance of bonds to purchase land	<u><u>\$ 110,000</u></u>

Investing and Financing Activities

From the additional information, the company acquired an **office building** for \$120,000 cash. This is a cash outflow reported in the investing section.

Building		
1/1/08	Balance	40,000
	Office building	120,000
12/31/08	Balance	160,000

Investing and Financing Activities

Illustration 17-13

Partial statement

Net cash provided by operating activities	<u>172,000</u>
Cash flows from investing activities:	
Purchase of building	(120,000)
Purchase of equipment	(25,000)
Sale of equipment	4,000
Net cash used by investing activities	<u>(141,000)</u>
Cash flows from financing activities:	
Issuance of common stock	20,000
Payment of cash dividends	(29,000)
Net cash used by financing activities	<u>(9,000)</u>
Net increase in cash	22,000
Cash at beginning of period	33,000
Cash at end of period	<u><u>\$ 55,000</u></u>
Disclosure: Issuance of bonds to purchase land	<u><u>\$ 110,000</u></u>

Investing and Financing Activities

The additional information explains that the equipment increase resulted from two transactions: (1) a purchase of equipment of \$25,000, and (2) the sale for \$4,000 of equipment costing \$8,000.

Equipment				
1/1/08	Balance	10,000	Equipment sold	8,000
	Purchase	25,000		
12/31/08	Balance	27,000		

Journal Entry

Cash	4,000	
Accumulated depreciation	1,000	
Loss on sale of equipment	3,000	
Equipment		8,000

Statement of Cash Flows

Indirect Method

Illustration 17-13

Cash flows from operating activities:	
Net income	\$ 145,000
Adjustments to reconcile net income to net cash provided by operating activities:	
Depreciation expense	9,000
Loss on sale of equipment	3,000
Decrease in accounts receivable	10,000
Increase in inventory	(5,000)
Increase in prepaid expenses	(4,000)
Increase in accounts payable	16,000
Decrease in income taxes payable	(2,000)
Net cash provided by operating activities	<u>172,000</u>
Cash flows from investing activities:	
Purchase of building	(120,000)
Purchase of equipment	(25,000)
Sale of equipment	4,000
Net cash used by investing activities	<u>(141,000)</u>
Cash flows from financing activities:	
Issuance of common stock	20,000
Payment of cash dividends	(29,000)
Net cash used by financing activities	<u>(9,000)</u>
Net increase in cash	22,000
Cash at beginning of period	33,000
Cash at end of period	<u>\$ 55,000</u>

Investing and Financing Activities

The additional information notes that the increase in common stock resulted from the issuance of new shares.

Common Stock		
1/1/08	Balance	50,000
	Shares sold	20,000
12/31/08	Balance	70,000

Investing and Financing Activities

Illustration 17-13

Partial statement

Net cash provided by operating activities	<u>172,000</u>
Cash flows from investing activities:	
Purchase of building	(120,000)
Purchase of equipment	(25,000)
Sale of equipment	4,000
Net cash used by investing activities	<u>(141,000)</u>
Cash flows from financing activities:	
Issuance of common stock	20,000
Payment of cash dividends	(29,000)
Net cash used by financing activities	<u>(9,000)</u>
Net increase in cash	22,000
Cash at beginning of period	33,000
Cash at end of period	<u><u>\$ 55,000</u></u>
Disclosure: Issuance of bonds to purchase land	<u><u>\$ 110,000</u></u>

Investing and Financing Activities

Retained earnings increased \$116,000 during the year. This increase can be explained by two factors: (1) Net income of \$145,000 increased retained earnings. (2) Dividends of \$29,000 decreased retained earnings

Retained Earnings				
		1/1/08	Balance	48,000
Dividends	29,000		Net income	145,000
		12/31/08	Balance	164,000

Statement of Cash Flows

Indirect Method

Illustration 17-13

Cash flows from operating activities:

Net income \$ 145,000

Adjustments to reconcile net income to net cash provided by operating activities:

Depreciation expense	9,000
Loss on sale of equipment	3,000
Decrease in accounts receivable	10,000
Increase in inventory	(5,000)
Increase in prepaid expenses	(4,000)
Increase in accounts payable	16,000
Decrease in income taxes payable	(2,000)

Net cash provided by operating activities 172,000

Cash flows from investing activities:

Purchase of building	(120,000)
Purchase of equipment	(25,000)
Sale of equipment	4,000

Net cash used by investing activities (141,000)

Cash flows from financing activities:

Issuance of common stock	20,000
Payment of cash dividends	(29,000)

Net cash used by financing activities (9,000)

Net increase in cash 22,000

Cash at beginning of period 33,000

Cash at end of period \$ 55,000

Investing and Financing Activities

Question

Which is an example of a cash flow from an investing activity?

- a. Receipt of cash from the issuance of bonds payable.
- b. Payment of cash to repurchase outstanding capital stock.
- c.** Receipt of cash from the sale of equipment.
- d. Payment of cash to suppliers for inventory.

Using Cash Flows to Evaluate a Company

Free Cash Flow

$$= \text{Cash Provided by Operating Activities} - \text{Capital Expenditures} - \text{Cash Dividends}$$

Free cash flow describes the cash remaining from operations after adjustment for capital expenditures and dividends.

Appendix 17A Using a Worksheet to Prepare the Statement of Cash Flows-Indirect Method

Illustration 17B-2

	A	B	C	D	E
1	XYZ COMPANY				
2	Worksheet				
3	Statement of Cash Flows For the Year Ended . . .				
4					
5		End of	Reconciling Items		End of
6		Last Year			Current Year
7		Balances	Debit	Credit	Balances
8	Balance Sheet Accounts				
9	Debit balance accounts	XX	XX	XX	XX
10		XX	XX	XX	XX
11	Totals	XXX			XXX
12	Credit balance accounts	XX	XX	XX	XX
13		XX	XX	XX	XX
14	Totals	XXX			XXX
15	Statement of Cash				
16	Flows Effects				
17	Operating activities				
18	Net income		XX		
19	Adjustments to net income		XX	XX	
20	Investing activities				
21	Receipts and payments		XX	XX	
22	Financing activities				
23	Receipts and payments		XX	XX	
24	Totals		XXX	XXX	
25	Increase (decrease) in cash		(XX)	XX	
26	Totals		XXX	XXX	
27					

Appendix 17A Using a Worksheet to Prepare the Statement of Cash Flows-Indirect Method

Preparing a Worksheet

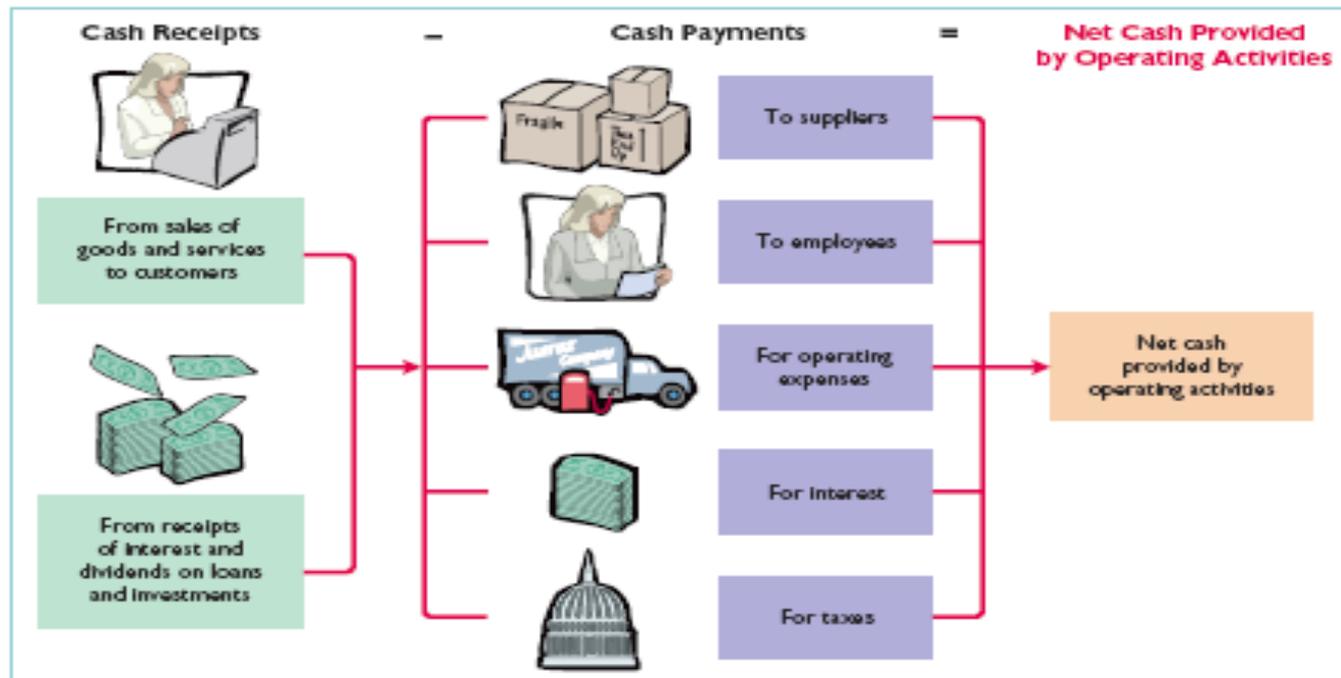
1. In the balance sheet accounts section, list accounts with debit balances separately from those with credit balances.
2. Enter the reconciling columns of the worksheet the data that explain the changes in the balance sheet accounts other than cash and their effects on the statement of cash flows.
3. Enter the cash line and at the bottom of the worksheet the increase or decrease in cash. This entry should enable the totals of the reconciling columns to be in agreement.

Appendix 17 B Statement of Cash Flows-Direct Method

1. Under the **direct method**, companies compute net cash provided by operating activities by **adjusting each item in the income statement** from the accrual basis to the cash basis.
2. To simplify and condense the operating activities section, companies **report only major classes of operating cash receipts and cash payments**.
3. For these major classes, the difference between cash receipts and cash payments is the net cash provided by operating activities.

Appendix 17 B Statement of Cash Flows-Direct Method

Illustration 17B-2



Appendix 17 B Statement of Cash Flows-Direct Method

Determining Cash Receipts from Customers

Illustration 17B-5

$$\begin{array}{l} \text{Cash Receipts} \\ \text{from} \\ \text{Customers} \end{array} = \begin{array}{l} \text{Revenues} \\ \text{from} \\ \text{Sales} \end{array} \left\{ \begin{array}{l} + \text{ Decrease in Accounts Receivable} \\ \text{or} \\ - \text{ Increase in Accounts Receivable} \end{array} \right.$$

Appendix 17 B Statement of Cash Flows-Direct Method

Determining Cash Payments to Suppliers for Inventory

Illustration 17B-9

$$\begin{array}{l} \text{Cash} \\ \text{Payments} \\ \text{to} \\ \text{Suppliers} \end{array} = \begin{array}{l} \text{Cost} \\ \text{of} \\ \text{Goods} \\ \text{Sold} \end{array} \left\{ \begin{array}{l} + \text{ Increase in Inventory} \\ \text{or} \\ - \text{ Decrease in Inventory} \end{array} \right\} \left\{ \begin{array}{l} + \text{ Decrease in} \\ \text{Accounts Payable} \\ \text{or} \\ - \text{ Increase in Accounts} \\ \text{Payable} \end{array} \right.$$

Appendix 17 B Statement of Cash Flows-Direct Method

Determining Cash Payments for Operating Expenses

Illustration 17B-11

$$\begin{array}{l} \text{Cash} \\ \text{Payments} \\ \text{for} \\ \text{Operating} \\ \text{Expenses} \end{array} = \text{Operating Expenses} \left\{ \begin{array}{l} + \text{ Increase in} \\ \text{Prepaid Expense} \\ \text{or} \\ - \text{ Decrease in} \\ \text{Prepaid Expense} \end{array} \right\} \left\{ \begin{array}{l} + \text{ Decrease in Accrued} \\ \text{Expenses Payable} \\ \text{or} \\ - \text{ Increase in Accrued} \\ \text{Expenses Payable} \end{array} \right\}$$

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 18

Financial Statement Analysis

Accounting Principles, Eighth Edition

Study Objectives

1. Discuss the need for comparative analysis.
2. Identify the tools of financial statement analysis.
3. Explain and apply horizontal analysis.
4. Describe and apply vertical analysis.
5. Identify and compute ratios used in analyzing a firm's liquidity, profitability, and solvency.
6. Understand the concept of earning power, and how irregular items are presented.
7. Understand the concept of quality of earnings.

Financial Statement Analysis

Basics of Financial Statement Analysis

- Need for comparative analysis
- Tools of analysis

Horizontal and Vertical Analysis

- Balance sheet
- Income statement
- Retained earnings statement

Ratio Analysis

- Liquidity
- Profitability
- Solvency
- Summary

Earning Power and Irregular Items

- Discontinued operations
- Extraordinary items
- Changes in accounting principle
- Comprehensive income

Quality of Earnings

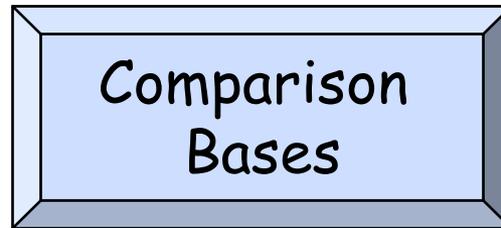
- Alternative accounting methods
- Pro forma income
- Improper recognition

Basics of Financial Statement Analysis

Analyzing financial statements involves:



- Liquidity
- Profitability
- Solvency



- Intracompany
- Industry averages
- Intercompany



- Horizontal
- Vertical
- Ratio

Horizontal Analysis

Horizontal analysis, also called **trend analysis**, is a technique for evaluating a series of financial statement data over a period of time.

Its **purpose** is to determine the increase or decrease that has taken place.

Horizontal analysis is commonly applied to the balance sheet, income statement, and statement of retained earnings.

Horizontal Analysis

Exercise: The comparative condensed balance sheets of Ramsey Corporation are presented below.

	2009	2008
Current assets	\$ 76,000	\$ 80,000
PP&E	99,000	90,000
Intangibles	25,000	40,000
Total assets	\$200,000	\$ 210,000
Current liabilities	\$ 40,800	\$ 48,000
Long-term liabilities	143,000	150,000
Stockholders' equity	16,200	12,000
Total liabilities & equity	\$200,000	\$ 210,000

Instructions: Prepare a **horizontal analysis** of the balance sheet data for Ramsey Corporation using 2008 as a base.

Horizontal Analysis

Exercise: The comparative condensed balance sheets of Ramsey Corporation are presented below.

	2009	2008	Increase (Decrease)	Percentage Change
Current assets	\$ 76,000	\$ 80,000	\$ (4,000)	-5.0%
PP&E	99,000	90,000	9,000	10.0%
Intangibles	25,000	40,000	(15,000)	-37.5%
Total assets	<u>\$200,000</u>	<u>\$ 210,000</u>	<u>\$ (10,000)</u>	<u>-4.8%</u>
Current liabilities	\$ 40,800	\$ 48,000	\$ (7,200)	-15.0%
Long-term liabilities	143,000	150,000	(7,000)	-4.7%
Stockholders' equity	16,200	12,000	4,200	35.0%
Total liabilities & equity	<u>\$200,000</u>	<u>\$ 210,000</u>	<u>\$ (10,000)</u>	<u>-4.8%</u>

Instructions: Prepare a **horizontal analysis** of the balance sheet data for Ramsey Corporation using 2008 as a base.

Vertical Analysis

Vertical analysis, also called **common-size analysis**, is a technique that expresses each financial statement item as a percent of a base amount.

On an **income statement**, we might say that selling expenses are 16% of net sales.

Vertical analysis is commonly applied to the balance sheet and the income statement.

Vertical Analysis

Exercise: The comparative condensed income statements of Hendi Corporation are shown below.

	2009	2008
	<u>Amount</u>	<u>Amount</u>
Net sales	\$ 600,000	\$ 500,000
Cost of goods sold	<u>483,000</u>	<u>420,000</u>
Gross profit	117,000	80,000
Operating expense	<u>57,200</u>	<u>44,000</u>
Net income	<u><u>\$ 59,800</u></u>	<u><u>\$ 36,000</u></u>

Instructions: Prepare a **vertical analysis** of the income statement data for Hendi Corporation in columnar form for both years.

Vertical Analysis

Exercise: The comparative condensed income statements of Hendi Corporation are shown below.

	2009		2008	
	Amount	Percent	Amount	Percent
Net sales	\$ 600,000	100.0%	\$ 500,000	100.0%
Cost of goods sold	483,000	80.5%	420,000	84.0%
Gross profit	117,000	19.5%	80,000	16.0%
Operating expense	57,200	9.5%	44,000	8.8%
Net income	\$ 59,800	10.0%	\$ 36,000	7.2%

Instructions: Prepare a **vertical analysis** of the income statement data for Hendi Corporation in columnar form for both years.

Ratio Analysis

Ratio analysis expresses the relationship among selected items of financial statement data.

Financial Ratio Classifications



Liquidity

Measures short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash.



Profitability

Measures the income or operating success of a company for a given period of time.



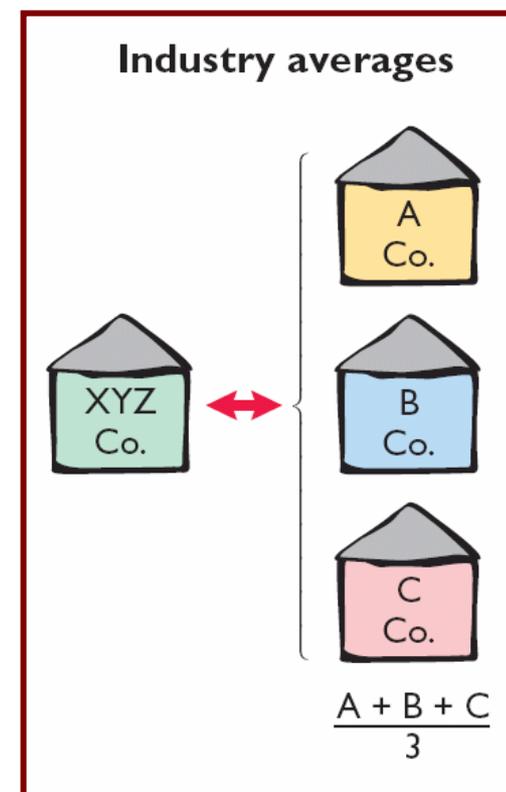
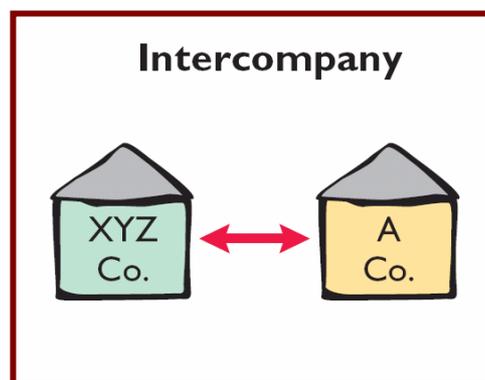
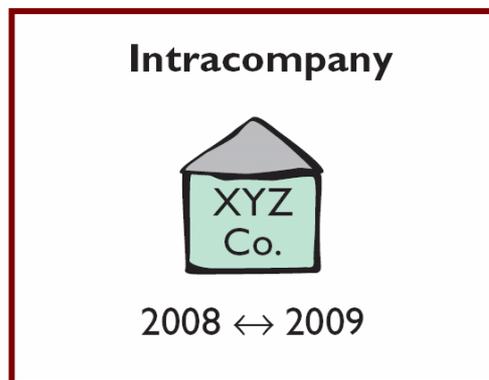
Solvency

Measures the ability of the company to survive over a long period of time.

Ratio Analysis

A **single ratio** by itself is **not very meaningful**.

The discussion of ratios will include the following types of comparisons.



Ratio Analysis

Liquidity Ratios

Measure the short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash.

- Short-term creditors such as bankers and suppliers are particularly interested in assessing liquidity.
- Ratios include the **current ratio**, the **acid-test ratio**, **receivables turnover**, and **inventory turnover**.

Ratio Analysis

Illustration

Taylor Tool Company Income Statement For the Year Ended December 31

	2009	2008
Net sales	\$ 1,818,500	\$ 1,750,500
Cost of goods sold	1,011,500	996,000
Gross profit	807,000	754,500
Selling and administrative expenses	506,000	479,000
Income from operations	301,000	275,500
Other expenses and losses:		
Interest expense	18,000	14,000
Income before income taxes	283,000	261,500
Income tax expense	84,000	77,000
Net income	\$ 199,000	\$ 184,500

Ratio Analysis

Taylor Tool Company Balance Sheets December 31

<u>Assets</u>	<u>2009</u>	<u>2008</u>
Current assets		
Cash	\$ 60,100	\$ 64,200
Short-term investments	69,000	50,000
Accounts receivable (net)	107,800	102,800
Inventory	133,000	115,500
Total current assets	369,900	332,500
Plant assets (net)	600,300	520,300
Total assets	\$ 970,200	\$ 852,800

Ratio Analysis

<u>Liabilities and Stockholders' Equity</u>	<u>2009</u>	<u>2008</u>
Current liabilities		
Accounts payable	\$ 160,000	\$ 145,400
Income taxes payable	43,500	42,000
Total current liabilities	<u>203,500</u>	<u>187,400</u>
Bonds payable	<u>200,000</u>	<u>200,000</u>
Total liabilities	<u>403,500</u>	<u>387,400</u>
Stockholders' equity		
Common stock (\$5 par)	280,000	300,000
Retained earnings	<u>286,700</u>	<u>165,400</u>
Total stockholders' equity	<u>566,700</u>	<u>465,400</u>
Total liabilities and equity	<u>\$ 970,200</u>	<u>\$ 852,800</u>

All sales were on account. The allowance for doubtful accounts was \$3,200 on December 31, 2009, and \$3,000 on December 31, 2008.

Compute the **Current Ratio** for 2009.

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

$$\frac{\$369,900}{\$203,500} = 1.82 : 1$$

The ratio of 1.82:1 means that for every dollar of current liabilities, the company has \$1.82 of current assets.

Ratio Analysis

Liquidity Ratios

Compute the **Acid-Test Ratio** for 2009.

$$\frac{\text{Cash} + \text{Short-Term Investments} + \text{Receivables (Net)}}{\text{Current Liabilities}} = \text{Acid-Test Ratio}$$

$$\frac{\$60,100 + \$69,000 + \$107,800}{\$203,500} = 1.16 : 1$$

The acid-test ratio measures immediate liquidity.

Compute the **Receivables Turnover** ratio for 2009.

$$\frac{\text{Net Credit Sales}}{\text{Average Net Receivables}} = \text{Receivables Turnover}$$

$$\frac{\$1,818,500}{(\$107,800 + \$102,800) / 2} = 17.3 \text{ times}$$

It measures the number of times, on average, the company collects receivables during the period.

Ratio Analysis

Liquidity Ratios

$$\frac{\$1,818,500}{(\$107,800 + \$102,800) / 2} = 17.3 \text{ times}$$

Receivables Turnover

A variant of the receivables turnover ratio is to convert it to an **average collection period** in terms of days.

$$365 \text{ days} / 17.3 \text{ times} = \text{every } 21.1 \text{ days}$$

This means that receivables are collected on average every 21 days.

Compute the **Inventory Turnover** ratio for 2009.

$$\frac{\text{Cost of Good Sold}}{\text{Average Inventory}} = \text{Inventory Turnover}$$

$$\frac{\$1,011,500}{(\$133,000 + \$115,500) / 2} = 8.1 \text{ times}$$

Inventory turnover measures the number of times, on average, the inventory is sold during the period.

Ratio Analysis

Liquidity Ratios

$$\frac{\$1,011,500}{(\$133,000 + \$115,500) / 2} = 8.1 \text{ times}$$

Inventory Turnover

A variant of inventory turnover is the **days in inventory**.

$$365 \text{ days} / 8.1 \text{ times} = \text{every } 45.1 \text{ days}$$

Inventory turnover ratios vary considerably among industries.

Ratio Analysis

Profitability Ratios

Measure the income or operating success of a company for a given period of time.

- Income, or the lack of it, affects the company's ability to obtain debt and equity financing, liquidity position, and the ability to grow.
- Ratios include the **profit margin, asset turnover, return on assets, return on common stockholders' equity, earnings per share, price-earnings, and payout** ratio.

Compute the **Profit Margin** ratio for 2009.

$$\frac{\text{Net Income}}{\text{Net Sales}} = \text{Profit Margin}$$

$$\frac{\$199,000}{\$1,818,500} = 10.9\%$$

Measures the percentage of each dollar of sales that results in net income.

Compute the **Asset Turnover** ratio for 2009.

$$\frac{\text{Net Sales}}{\text{Average Assets}} = \text{Asset Turnover}$$

$$\frac{\$1,818,500}{(\$970,200 + \$852,800) / 2} = 2.0 \text{ times}$$

Measures how efficiently a company uses its assets to generate sales.

Ratio Analysis

Profitability Ratios

Compute the **Return on Assets** ratio for 2009.

$$\frac{\text{Net Income}}{\text{Average Assets}} = \text{Return on Assets}$$

$$\frac{\$199,000}{(\$970,200 + \$852,800) / 2} = 21.8\%$$

An overall measure of profitability.

Ratio Analysis

Profitability Ratios

Compute the **Return on Common Stockholders' Equity** ratio for 2009.

$$\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Stockholders' Equity}} = \text{Return on Common Stockholders' Equity}$$

$$\frac{\$199,000 - \$0}{(\$566,700 + \$465,400) / 2} = 38.6\%$$

Shows how many dollars of net income the company earned for each dollar invested by the owners.

Ratio Analysis

Profitability Ratios

Compute the **Earnings Per Share** for 2009.

$$\frac{\text{Net Income}}{\text{Weighted Average Common Shares Outstanding}} = \text{Earnings Per Share}$$

$$\frac{\$199,000}{57,000 \text{ (given)}} = \$3.49 \text{ per share}$$

A measure of the net income earned on each share of common stock.

Compute the **Price Earnings Ratio** for 2009.

$$\frac{\text{Market Price per Share of Stock}}{\text{Earnings Per Share}} = \text{Price Earnings Ratio}$$

$$\frac{\$25 \text{ (given)}}{\$3.49} = 7.16 \text{ times}$$

The price-earnings (PE) ratio reflects investors' assessments of a company's future earnings.

Compute the **Payout Ratio** for 2009.

$$\frac{\text{Cash Dividends}}{\text{Net Income}} = \text{Payout Ratio}$$

$$\frac{\$77,700^*}{\$199,000} = 39\%$$

Measures the percentage of earnings distributed in the form of cash dividends.

* From analysis of retained earnings.

LO 5 Identify and compute ratios used in analyzing a firm's liquidity, profitability, and solvency.

Ratio Analysis

Solvency Ratios

Solvency ratios measure the ability of a company to survive over a long period of time.

- **Debt to total assets** and **times interest earned** are two ratios that provide information about debt-paying ability.

Compute the **Debt to Total Assets Ratio** for 2009.

$$\frac{\text{Total Debt}}{\text{Total Assets}} = \text{Debt to Total Assets Ratio}$$

$$\frac{\$403,500}{\$970,200} = 41.6\%$$

Measures the percentage of the total assets that creditors provide.

Compute the **Times Interest Earned** ratio for 2009.

$$\frac{\text{Income before Income Taxes and Interest Expense}}{\text{Interest Expense}} = \text{Times Interest Earned}$$

$$\frac{\$199,000 + \$84,000 + \$18,000}{\$18,000} = 16.7 \text{ times}$$

Provides an indication of the company's ability to meet interest payments as they come due.

Earning Power and Irregular Items

Earning power means the normal level of income to be obtained in the future.

“Irregular” items are separately identified on the income statement. Two types are:

1. Discontinued operations.
2. Extraordinary items.

These “irregular” items are reported net of income taxes.

Earning Power and Irregular Items

Discontinued Operations

- (a) Refers to the disposal of a **significant component** of a business.
- (b) Report the income (loss) from discontinued operations in two parts:
 1. income (loss) from operations (net of tax) and
 2. gain (loss) on disposal (net of tax).

Earning Power and Irregular Items

Exercise: McCarthy Corporation had after tax income from continuing operations of \$55,000,000 in 2008. During 2008, it disposed of its restaurant division at a pretax loss of \$270,000. Prior to disposal, the division operated at a pretax loss of \$450,000 in 2008. Assume a tax rate of 30%. Prepare a partial income statement for McCarthy.

Income from continuing operations	\$55,000,000
Discontinued operations:	
Loss from operations, net of \$135,000 tax	315,000
Loss on disposal, net of \$81,000 tax	189,000
Total loss on discontinued operations	<u>504,000</u>
Net income	<u><u>\$54,496,000</u></u>

Earning Power and Irregular Items

Discontinued Operations are reported after "Income from continuing operations."

Previously labeled as "Net Income".

Moved to

Income Statement (in thousands)

Sales	\$ 285,000
Cost of goods sold	149,000

Other revenue (expense):

Interest revenue	17,000
Interest expense	(21,000)
Total other	(4,000)
Income before taxes	79,000
Income tax expense	24,000
Income from continuing operations	55,000
Discontinued operations:	
Loss from operations, net of tax	315
Loss on disposal, net of tax	189
Total loss on discontinued operations	504
Net income	\$ 54,496

Earning Power and Irregular Items

Extraordinary items are nonrecurring material items that differ significantly from a company's typical business activities.

An extraordinary item must be both of an

- Unusual Nature and
- Occur Infrequently

Company must consider the **environment** in which it operates.

Amounts reported "net of tax."

Earning Power and Irregular Items

Are these considered Extraordinary Items?

(a) A large portion of a tobacco manufacturer's crops are destroyed by a hail storm. Severe damage from hail storms in the locality where the manufacturer grows tobacco is rare.

YES

(b) A citrus grower's Florida crop is damaged by frost.

NO

(c) Loss from sale of temporary investments.

NO

(d) Loss attributable to a labor strike.

NO

Earning Power and Irregular Items

Are these considered Extraordinary Items?

(d) Loss from flood damage. (The nearby Black River floods every 2 to 3 years.)

NO

(e) An earthquake destroys one of the oil refineries owned by a large multi-national oil company. Earthquakes are rare in this geographical location.

YES

(f) Write-down of obsolete inventory.

NO

(g) Expropriation of a factory by a foreign government.

YES

Earning Power and Irregular Items

Exercise: McCarthy Corporation had after tax income from continuing operations of \$55,000,000 in 2008. In addition, it suffered an unusual and infrequent pretax loss of \$770,000 from a volcano eruption. The corporation's tax rate is 30%. Prepare a partial income statement for McCarthy Corporation beginning with income from continuing operations.

Income from continuing operations	\$55,000,000
Extraordinary loss, net of \$231,000 tax	<u>539,000</u>
Net income	<u><u>\$54,461,000</u></u>

$(\$770,000 \times 30\% = \$231,000 \text{ tax})$

Earning Power and Irregular Items

Extraordinary Items are reported after "Income from continuing operations."

Previously labeled as "Net Income".

Moved to

Income Statement (in thousands)

Sales	\$ 285,000
Cost of goods sold	149,000

Other revenue (expense):

Interest revenue	17,000
Interest expense	(21,000)
Total other	(4,000)
Income before taxes	79,000
Income tax expense	24,000
Income from continuing operations	55,000
Extraordinary loss, net of tax	539
Net income	\$ 54,461

Earning Power and Irregular Items

Reporting when both
Discontinued Operations
and
Extraordinary Items
are present.

Discontinued
Operations

Extraordinary Item

Income Statement (in thousands)

Sales	\$ 285,000
Cost of goods sold	149,000

Interest expense	(21,000)
Total other	(4,000)
Income before taxes	79,000
Income tax expense	24,000
Income from continuing operations	55,000
Discontinued operations:	
Loss from operations, net of tax	315
Loss on disposal, net of tax	189
Total loss on discontinued operations	504
Income before extraordinary item	54,496
Extraordinary loss, net of tax	539
Net income	\$ 53,957

Earning Power and Irregular Items

Change in Accounting Principle

- Occurs when the principle used in the current year is different from the one used in the preceding year.
- Accounting rules permit a change if justified.
- Changes are reported retroactively.
- Example would include a change in inventory costing method such as FIFO to average cost.

Earning Power and Irregular Items

Comprehensive Income

Income Statement (in thousands)	
Sales	\$ 285,000
Cost of goods sold	149,000
Gross profit	136,000
Operating expenses:	
Advertising expense	10,000
Depreciation expense	43,000
Total operating expense	53,000
Income from operations	83,000
Other revenue:	
Interest revenue	17,000
Total other	17,000
Income before taxes	100,000
Income tax expense	24,000
Net income	\$ 76,000

All changes in stockholders' equity except those resulting from investments by stockholders and distributions to stockholders.

Reported in Stockholders' Equity

- +
- Unrealized gains and losses on available-for-sale securities.
 - Plus other items

Earning Power and Irregular Items

Comprehensive Income

Why are gains and losses on available-for-sale securities excluded from net income?

Because disclosing them separately

1. reduces the volatility of net income due to fluctuations in fair value,
2. yet informs the financial statement user of the gain or loss that would be incurred if the securities were sold at fair value.

Quality of Earnings

A company that has a high **quality of earnings** provides full and transparent information that will not confuse or mislead users of the financial statements.

Companies have incentives to **manage income** to meet or beat Wall Street expectations, so that

- the market price of stock increases and
- the value of stock options increase.

Quality of Earnings

Alternative Accounting Methods

- Variations among companies in the application of GAAP may hamper comparability and reduce quality of earnings.

Pro Forma Income

- Pro forma income usually excludes items that the company thinks are unusual or nonrecurring.
- Some companies have abused the flexibility that pro forma numbers allow.

Quality of Earnings

Improper Recognition

Some managers have felt pressure to continually increase earnings and have manipulated the earnings numbers to meet these expectations.

Abuses include:

- Improper recognition of revenue (*channel stuffing*).
- Improper capitalization of operating expenses (**WorldCom**).
- Failure to report all liabilities (**Enron**).

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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Dan R. Ward
Suzanne P. Ward

University of Louisiana at Lafayette

CHAPTER 19

MANAGERIAL ACCOUNTING

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Study Objectives

1. Explain the distinguishing features of managerial accounting.
2. Identify the 3 broad functions of management.
3. Define the 3 classes of manufacturing costs.
4. Distinguish between product and period costs.
5. Explain the differences between a merchandising and a manufacturing income statement.

Study Objectives

6. Indicate how cost of goods manufactured is determined.
7. Explain the difference between a merchandising and a manufacturing balance sheet.
8. Identify trends in managerial accounting.



Preview of Chapter

- **Managerial Accounting Basics**
 - Compare managerial and financial accounting
 - Management functions and Business Ethics
- **Managerial Cost Concepts**
 - Manufacturing costs
 - Product vs. period costs
- **Manufacturing Costs in Financial Statements**
 - Income Statement and Balance Sheet
 - Cost concepts - A review
- **Managerial Accounting Today**
 - Service industry trends
 - Managerial accounting practices

Managerial Accounting

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graph TD; MA[Managerial Accounting] --- MAB[Managerial Accounting Basics]; MA --- MCC[Managerial Cost Concepts]; MA --- MCF[Manufacturing Costs in Financial Statements]; MA --- MAT[Managerial Accounting Today];
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Managerial Accounting Basics

- Compare Managerial and Financial Accounting
- Management Functions
- Business Ethics

Managerial Cost Concepts

- Manufacturing Costs
- Product vs Period Costs

Manufacturing Costs in Financial Statements

- Income Statement
- Balance Sheet
- Cost Concepts – A Review

Managerial Accounting Today

- Service Industry Trends
- Managerial Accounting Practices

Managerial Accounting Basics

Definition of Managerial Accounting

A field of accounting that provides economic and financial information for managers and other internal users.

Also called *Management Accounting*

Managerial Accounting Basics

Managerial Accounting Activities

- **Explain manufacturing and nonmanufacturing costs and how they are reported** (Chapter 19)
- **Compute cost of providing a service or manufacturing a product.** (Chapters 20 and 21)
- **Determine behavior of costs and expenses as activity changes.** (Chapter 22)

Managerial Accounting Basics

Managerial Activities: Continued

- **Assist management in profit planning and formalizing these plans in the form of budgets.** (Chapter 23)
- **Help to control costs by comparing actual results with planned objectives and standard costs.** (Chapters 24 and 25)
- **Accumulate and present data for making decisions.**
(Chapter 26)

Managerial Accounting Basics

Distinguishing Features

- Applies to all types of business -
Service, Merchandising, and Manufacturing
- Applies to all forms of businesses -
Proprietorships, Partnerships, and Corporations
- Applies to not-for-profit and profit oriented companies

Managerial Accounting Basics

Distinguishing Features: Continued

- More responsible for strategic cost management
- Teams with people from production, marketing, engineering, etc.
- Aid in making critical decisions



Comparing Managerial and Financial Accounting

Similarities

- Both deal with economic events of a business -
Thus, interests overlap
- Both require that economic events be quantified and communicated to interested parties -
Determining unit cost is part of managerial accounting,
Reporting cost of goods manufactured is a part of financial accounting



Comparing Managerial and Financial Accounting

Differences

Financial Accounting

- External users: stockholders, creditors, and regulators.
- Financial statements.
- Quarterly and annually.
- General-purpose.
- Pertains to business as a whole.
- Highly aggregated (condensed).
- Limited to double-entry accounting and cost data.
- Generally accepted accounting principles.
- Audit by CPA.



Primary Users of Reports

Types and Frequency of Reports

Purpose of Reports

Content of Reports

Verification Process

Managerial Accounting

- Internal users: officers and managers.
- Internal reports.
- As frequently as needed.
- Special-purpose for specific decisions.
- Pertains to subunits of the business.
- Very detailed.
- Extends beyond double-entry accounting to any relevant data.
- Standard is relevance to decisions.
- No independent audits.



Managerial Accounting Basics

Review Question

Managerial accounting:

- a. Pertains to the entity as a whole and is highly aggregated.
- b.** Places emphasis on special-purpose information.
- c. Is limited to cost data.
- d. Is governed by generally accepted accounting principles.

Managerial Accounting Basics

Management Functions

Management's activities and responsibilities can be classified into the following three broad functions:

Planning

Directing

Controlling

Management Functions

Planning

- Look ahead and establish objectives such as -

Maximize short-term profit
Commit to environmental protection



- Key Objective: Add *value* to the business

Value measured by trading price of stock
and by potential selling price of the company

Management Functions

Directing

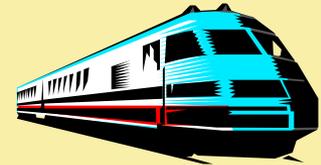
- Coordinate diverse activities and human resources
- Implement planned objectives
- Provide incentives to motivate employees
- Hire and train employees including executives, managers, and supervisors
- Produce smooth-running operation



Management Functions

Controlling

- Keep activities on track
- Determine whether goals are met
- Decide changes needed to get back on track
- May use an informal or formal system of evaluations



Good decision making is the outcome of good judgment in planning, directing, and controlling.

Good Ethics - Good Business

Business Ethics

- Business scandals caused massive investment losses and employee layoffs.
- Corporate fraud has increased 13% in last 5 years.
- Employee fraud - 60% of all fraud
- Intentional misstatement of financial reports
Aka *financial reporting fraud*
Most costly to companies

Good Ethics - Good Business

Creating Proper Incentives

- Systems to monitor and evaluate employees may produce incentives for unethical actions.
- Employees may feel that they must succeed no matter what.
- Ineffective and unrealistic controls may result in declining product quality.

Good Ethics - Good Business

Code of Ethical Standards

Sarbanes-Oxley Act of 2002

- Clarifies management's responsibilities.
- Certifications by CEO and CFO -
*fairness of financial statements and
adequacy of internal control*
- Selection criteria for Board of Directors and Audit Committee
- Substantially increased penalties for misconduct
- IMA *Statement of Ethical Professional Practices*

Management Functions

Review Question

The management of an organization performs several broad functions. They are:

- a. Planning, directing, and selling.
- b. Directing, manufacturing, and controlling.
- c. Planning, manufacturing, and controlling.
- d. Planning, directing, and controlling.

Managerial Cost Concepts

Manufacturing Costs

- Manufacturing consists of *activities to convert raw materials into finished goods.*
- In contrast, a merchandising firm sells goods in the form in which they were bought.
- Categories of manufacturing costs include:



Manufacturing Costs

Materials

Raw Materials

Basic materials used in manufacturing

Direct Materials

Raw materials that can be physically and directly associated with the finished product

Manufacturing Costs

Materials

Indirect Materials

- Raw materials that *cannot* be easily associated with the finished product
- Not physically part of the finished product *or* they are an insignificant part of finished product in terms of cost
- Considered part of *manufacturing overhead*

Manufacturing Costs

Labor

Direct Labor

Work of factory employees that can be physically and directly associated with converting raw materials into finished goods

Indirect Labor

Work of factory employees that has no physical association with the finished product or for which it is impractical to trace to the goods produced

Manufacturing Costs

Manufacturing Overhead

- Costs that are *indirectly* associated with manufacturing the product
- Includes all manufacturing costs *except* direct materials and direct labor

Manufacturing Costs

Review Question

Which of the following is *not* an element of manufacturing overhead?:

- a. Sales manager's salary.
- b. Plant manager's salary.
- c. Factory repairman's wages.
- d. Product inspector's salary.

Product Versus Period Costs

Product Costs

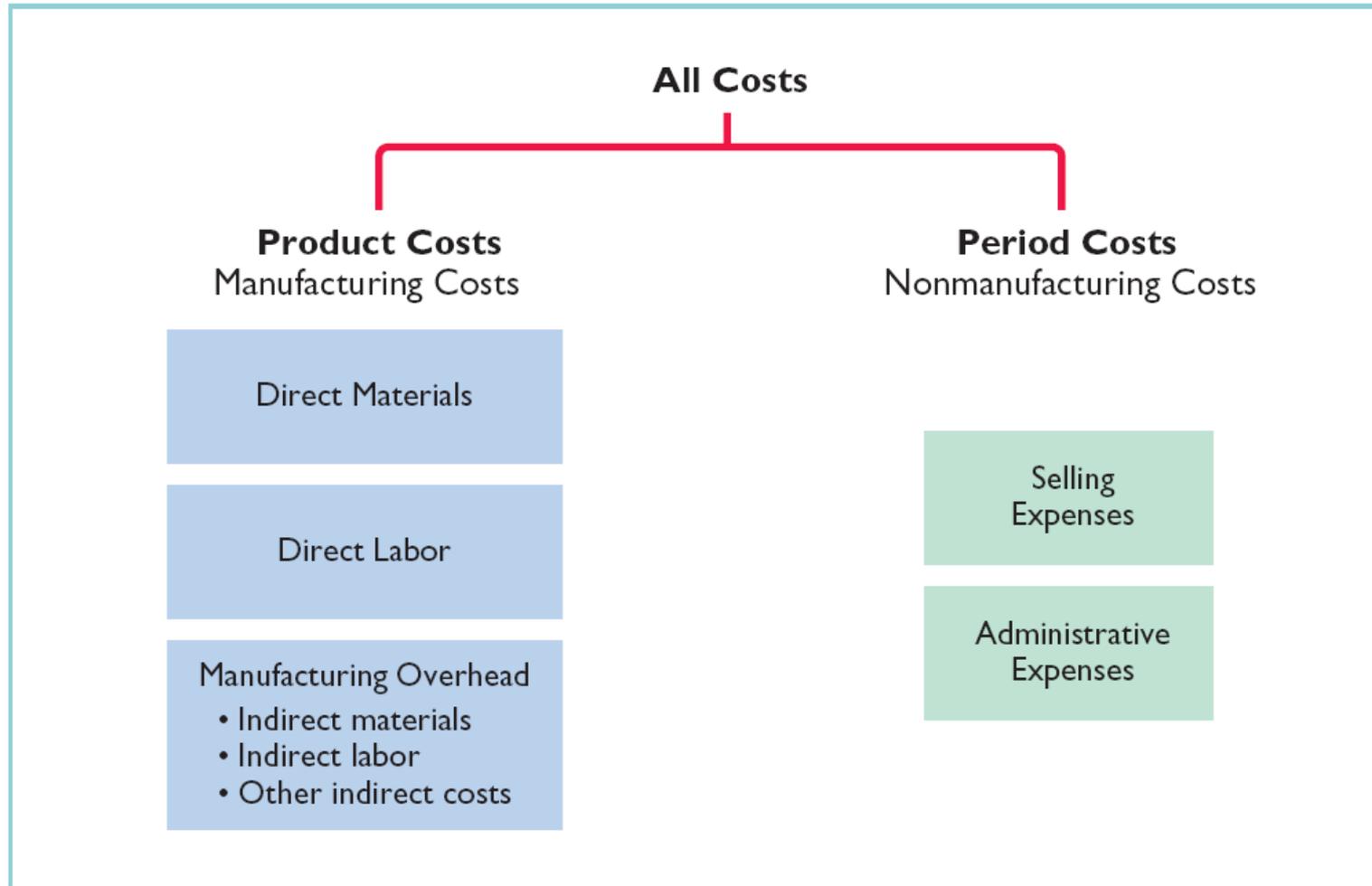
- Components: *direct material cost*, *direct labor cost*, and *manufacturing overhead*
- A necessary and integral part of producing the product
- Recorded as *inventory* when incurred
- Not an expense until the finished goods inventory is sold then cost of goods sold

Product Versus Period Costs

Period Costs

- Matched with revenue of a specific time period and *charged to expense as incurred*
- Non-manufacturing costs
- Deducted from revenues in period incurred to determine net income
- Includes all selling and administrative expenses

Product Versus Period Costs



Manufacturing Costs in Financial Statements

Income Statement

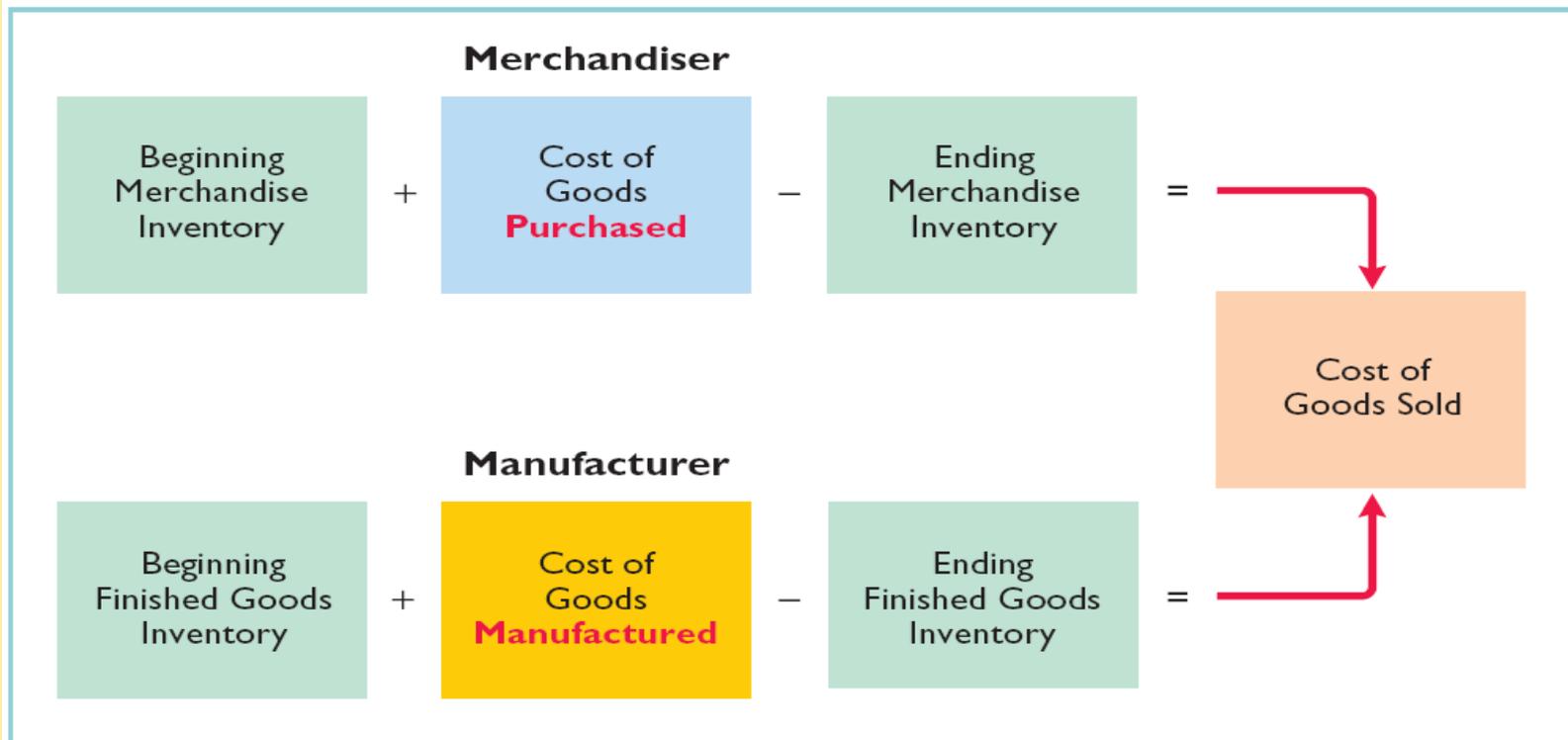
The income statement for a manufacturer is similar to that of a merchandiser *except* for the *cost of goods sold section*.



COGS

Manufacturing Costs in Financial Statements

Cost of Goods Sold Components Merchandiser versus Manufacturer



Manufacturing Costs in Financial Statements

Cost of Goods Sold Section of the Income Statement

MERCHANDISING COMPANY Income Statement (partial) For the Year Ended December 31, 2008		MANUFACTURING COMPANY Income Statement (partial) For the Year Ended December 31, 2008	
Cost of goods sold		Cost of goods sold	
Merchandise inventory, January 1	\$ 70,000	Finished goods inventory, January 1	\$ 90,000
Cost of goods purchased	<u>650,000</u>	Cost of goods manufactured	<u>370,000</u>
		(see Illustration 19-7)	
Cost of goods available for sale	720,000	Cost of goods available for sale	460,000
Merchandise inventory, December 31	<u>400,000</u>	Finished goods inventory, December 31	<u>80,000</u>
Cost of goods sold	<u>\$320,000</u>	Cost of goods sold	<u>\$380,000</u>

Manufacturing Costs in Financial Statements

OLSEN MANUFACTURING COMPANY

Cost of Goods Manufactured Schedule
For the Year Ended December 31, 2008

Work in process, January 1		\$ 18,400
Direct materials		
Raw materials inventory, January 1	\$ 16,700	
Raw materials purchases	152,500	
Total raw materials available for use	169,200	
Less: Raw materials inventory, December 31	22,800	
Direct materials used		\$146,400
Direct labor		175,600
Manufacturing overhead		
Indirect labor	14,300	
Factory repairs	12,600	
Factory utilities	10,100	
Factory depreciation	9,440	
Factory insurance	8,360	
Total manufacturing overhead		54,800
Total manufacturing costs		376,800
Total cost of work in process		395,200
Less: Work in process, December 31		25,200
Cost of goods manufactured		\$370,000

Manufacturing Costs in Financial Statements

Balance Sheet - Inventories

Merchandising Company
One category of
inventory:
Merchandise Inventory

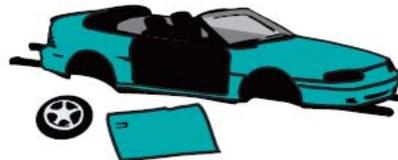
Manufacturing Company
May have three
inventories:
Raw Materials
Work in Process
Finished Goods

Raw Materials
Inventory



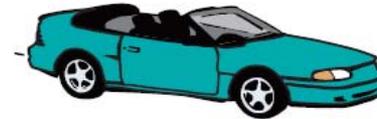
Shows the cost of raw materials on hand.

Work in Process
Inventory



Shows the cost applicable to units that have been started into production but are only partially completed.

Finished Goods
Inventory



Shows the cost of completed goods on hand.

Manufacturing Costs in Financial Statements

Balance Sheet - Inventories

MERCHANTISING COMPANY		MANUFACTURING COMPANY	
Balance Sheet December 31, 2008		Balance Sheet December 31, 2008	
Current assets		Current assets	
Cash	\$100,000	Cash	\$180,000
Receivables (net)	210,000	Receivables (net)	210,000
Merchandise inventory	400,000	Inventories	
Prepaid expenses	22,000	Finished goods	\$80,000
Total current assets	<u>\$732,000</u>	Work in process	25,200
		Raw materials	22,800
		Prepaid expenses	18,000
		Total current assets	<u>\$536,000</u>

LO 7 Explain the difference between a merchandising and a manufacturing balance sheet

Manufacturing Costs

Review Question

Direct Materials are a:

	Product Cost	Manufacturing Overhead	Period Cost
a.	Yes	Yes	No
<input checked="" type="radio"/> b.	Yes	No	No
c.	Yes	Yes	Yes
d.	No	No	No

Managerial Accounting Today

Service Industry Trends

- U.S. economy has shifted toward an *emphasis on providing services* rather than goods
- *Over 50%* of U.S. workers are now employed by service companies
- Trend is expected to continue in the future
- *Most of the techniques learned for manufacturing firms are applicable to service companies*

Managerial Accounting Today

Managerial Accounting Practices

● Value Chain

Refers to all activities associated with providing a product or service

For a manufacturing firm these include the following:

					
Research & development and product design	Acquisition of raw materials	Production	Sales & marketing	Delivery	Customer relations and subsequent services

Managerial Accounting Today

Managerial Accounting Practices

- **Just-In-Time (JIT) Inventory Methods**

Inventory system in which goods are manufactured or purchased just in time for use

- **Quality**

Increased emphasis on product quality because goods are produced only as needed

Total Quality Management (TQM)

- a philosophy of zero defects -

Managerial Accounting Today

Managerial Accounting Practices

- **Activity-Based-Costing (ABC)**

 - Allocates overhead based on use of activities

 - Results in more accurate product costing and scrutiny of all activities in the value chain

- **Balanced Scorecard**

 - Evaluates operations in an *integrated* fashion

 - Uses both financial and non-financial measures

 - Links performance measures to overall company objectives

Managerial Accounting Today

Review Question

Which of the following managerial accounting techniques attempts to allocate manufacturing overhead in a more meaningful manner?

- a. Just-in-time inventory.
- b. Total-quality management.
- c. Balanced scorecard.
- d. Activity-based costing.

Chapter Review - Brief Exercise 19-5

Indicate whether each of the following costs of an automobile manufacturer would be classified as direct materials, direct labor, or manufacturing overhead.

- | | |
|-----------|--------------------------------------|
| <u>DM</u> | a. Windshield |
| <u>DM</u> | b. Engine |
| <u>DL</u> | c. Wages of assembly line worker |
| <u>MO</u> | d. Depreciation of factory machinery |
| <u>MO</u> | e. Factory machinery lubricants |
| <u>DM</u> | f. Tires |
| <u>DM</u> | g. Steering wheel |
| <u>MO</u> | h. Salary of painting supervisor |

Chapter Review - Brief Exercise 19-6

Identify whether each of the following costs should be classified as product costs or period costs.

<u>Product</u>	a. Manufacturing overhead
<u>Period</u>	b. Selling expenses
<u>Period</u>	c. Administrative expenses
<u>Period</u>	d. Advertising expense
<u>Product</u>	e. Direct labor
<u>Product</u>	f. Direct material

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CHAPTER 20

JOB ORDER COST ACCOUNTING

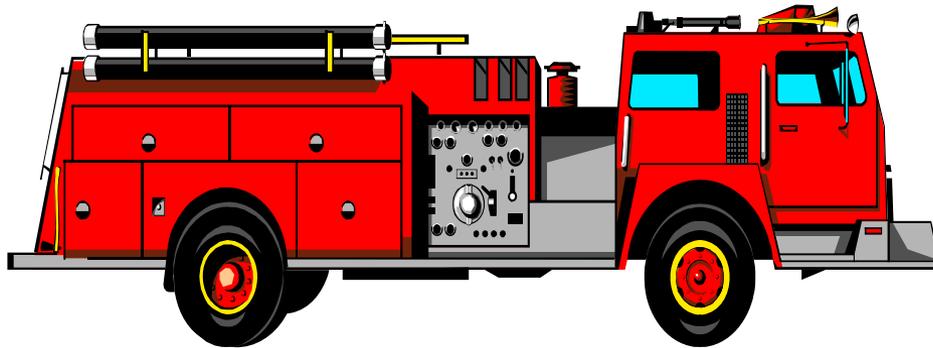
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Study Objectives

1. Explain the characteristics and purposes of cost accounting.
2. Describe the flow of costs in a job order cost accounting system.
3. Explain the nature and importance of a job cost sheet.
4. Indicate how the predetermined overhead rate is determined and used.

Study Objectives

5. Prepare entries for jobs completed and sold.
6. Distinguish between under- and over-applied manufacturing overhead.



Preview of Chapter

Accurate product costing is **critical** to a company's success

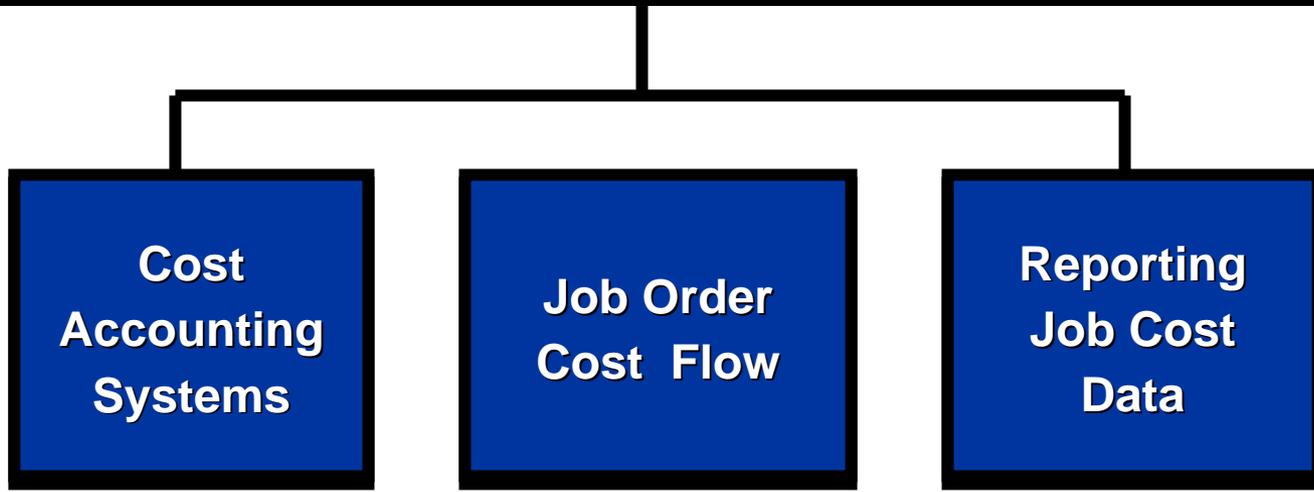
For accurate bids on new jobs

For determining potential profitability of new jobs

For identifying profitability of completed jobs



Job Order Cost Accounting



- Job Order Cost System
- Process Cost System

- Accumulating Manufacturing Costs
- Assigning Manufacturing Costs to Work in Process
- Assigning Costs to Finished Goods
- Assigning Costs to Cost of Goods Sold
- Summary

- Cost of goods manufactured schedule
- Income statement presentation
- Under-or overapplied manufacturing overhead

Cost Accounting Systems

- Cost accounting involves:
Measuring,
Recording, and
Reporting of product costs
- Consists of the various manufacturing costs that are fully integrated into the general ledger system.

*An important feature is the use of a **perpetual** inventory system to provide immediate, up-to-date information on the cost of a product.*

Cost Accounting Systems

There are two basic types of cost accounting systems.

Job Order Cost Systems and Process Cost Systems

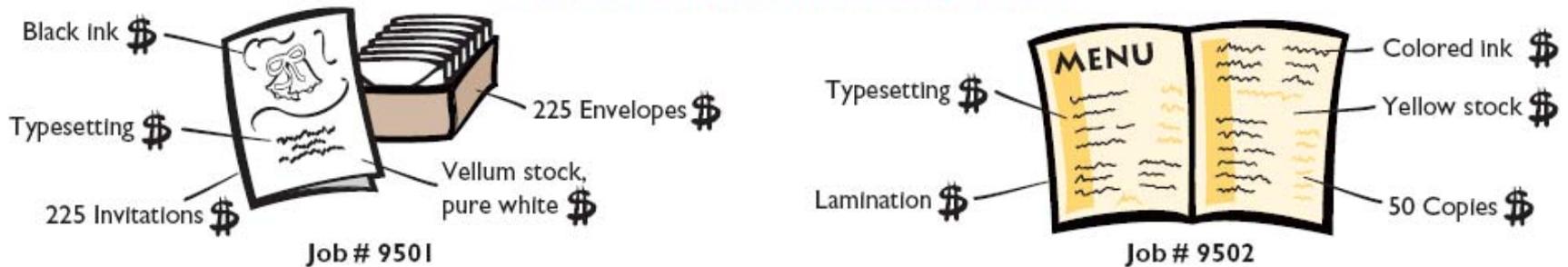
Job Order Cost System

- Costs are assigned to each *job or batch*
- A job may be for a specific order or inventory
- A key feature:
Each job or batch has its own distinguishing characteristics
- The objective: *to compute the cost per job*
- Measures costs for each job completed - *not* for set time periods

Job Order Cost System

Job Order Cost System

Two jobs: Wedding Invitations and Menus

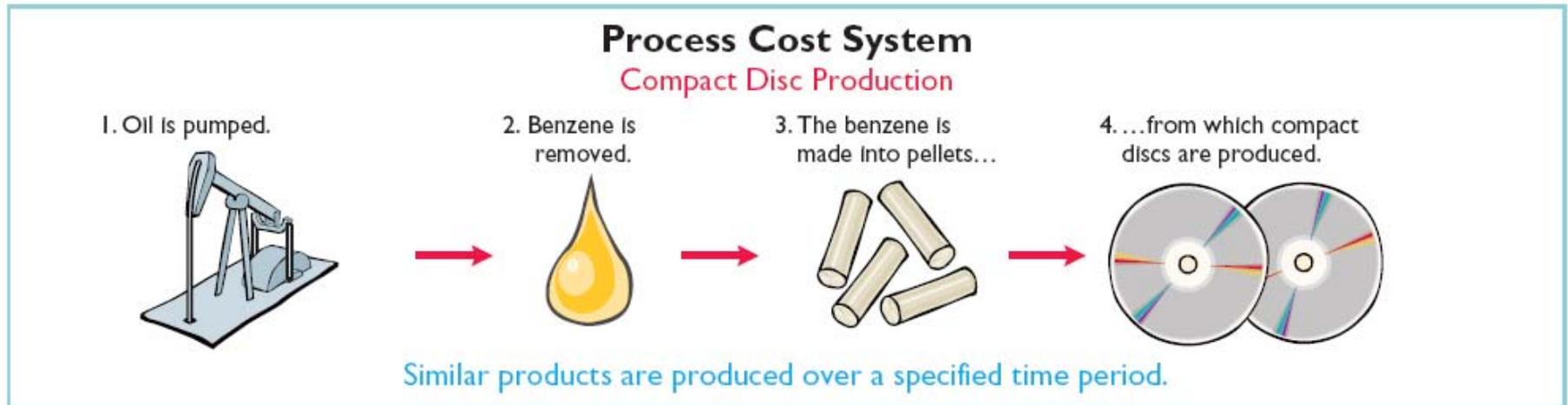


Each job has distinguishing characteristics and related costs.

Process Cost System

- Used when a large volume of similar products are manufactured -
Cereal, Automobiles, Compact Discs, Paint
- Costs are accumulated for a *specific* time period -
A week or a month
- Costs are assigned to *departments or processes* for a set period of time

Process Cost System



Cost Accounting Systems

Review Question

Cost accounting involves the measuring, recording, and reporting of:

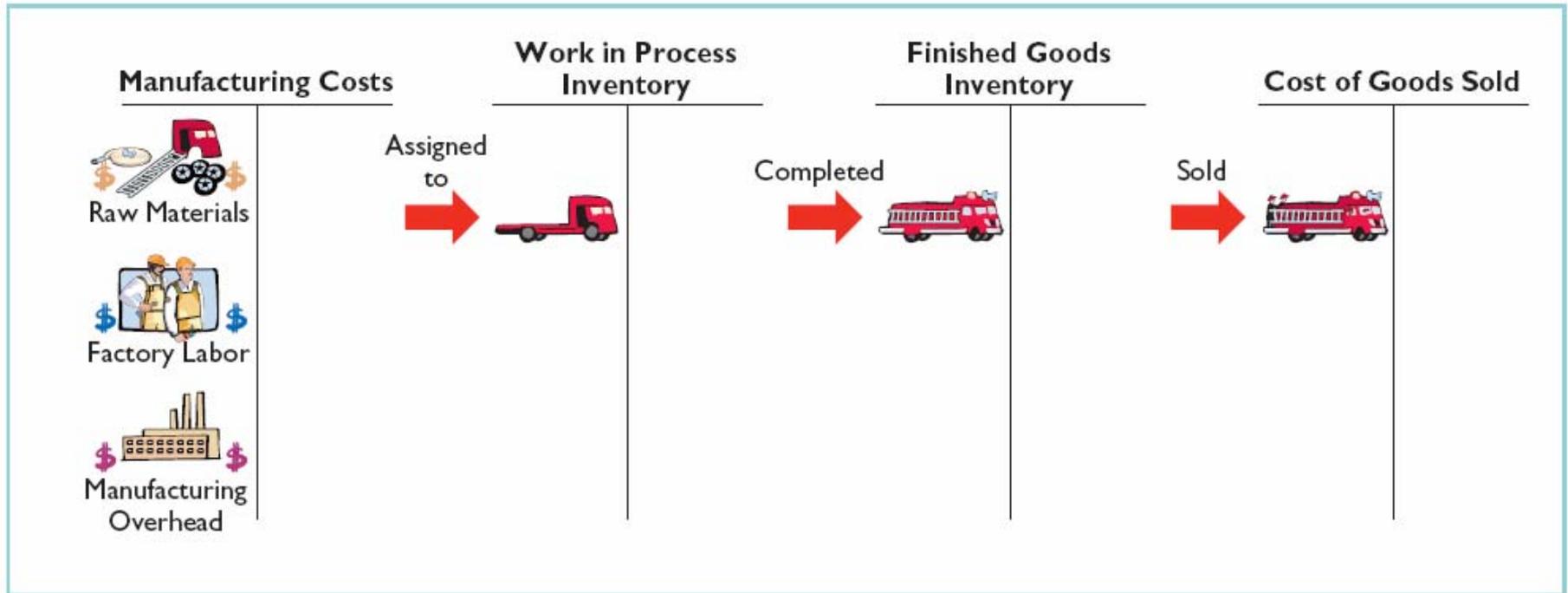
- a. Product costs.
- b. Future costs.
- c. Manufacturing processes.
- d. Managerial accounting decisions.

Job Order Cost Flows

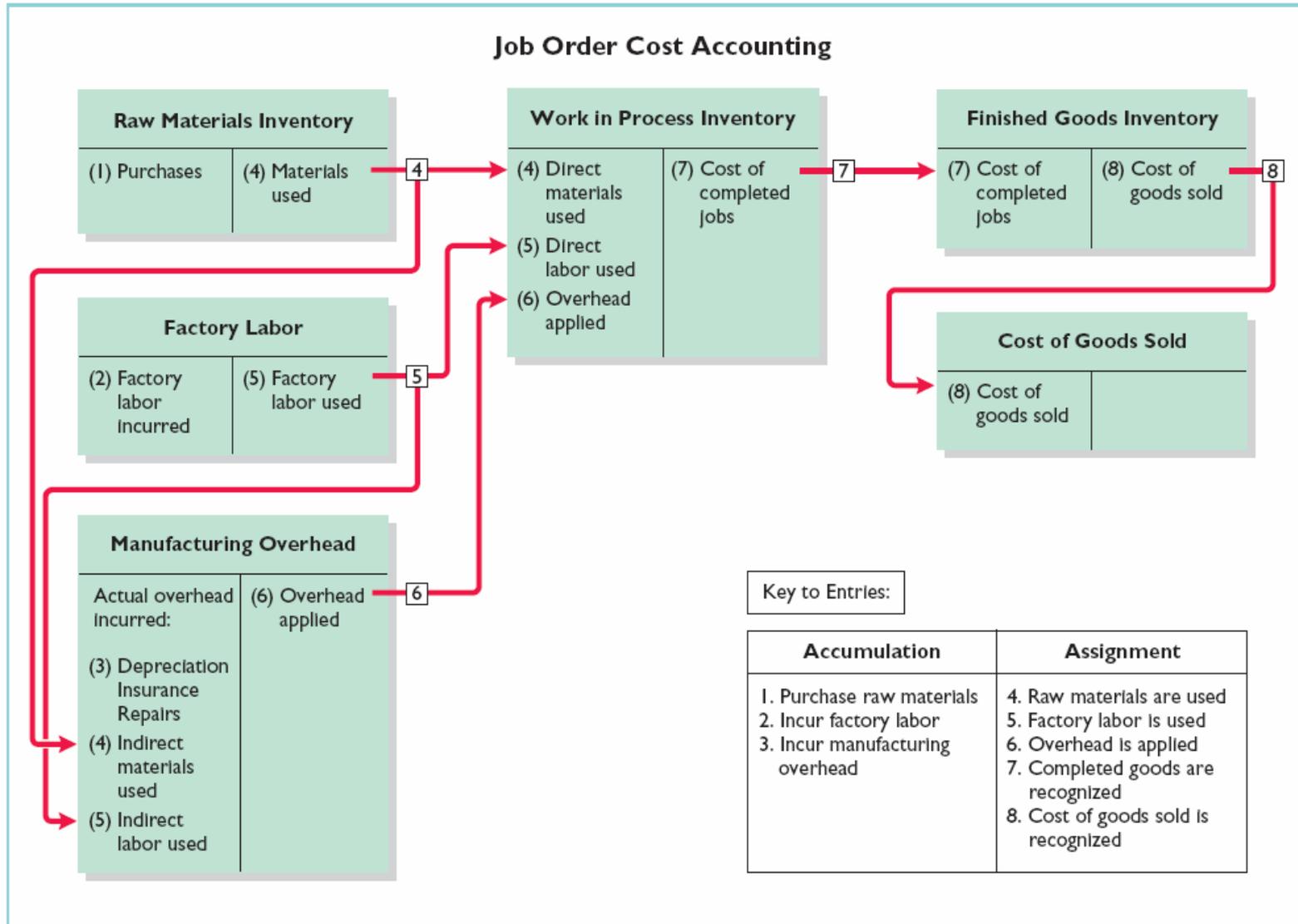
The cost flow parallels the physical flow of the materials as they are converted into finished goods

- Manufacturing costs are assigned to **Work in Process**
- Cost of completed jobs is transferred to **Finished Goods**
- When units are sold, the cost is transferred to **Cost of Goods Sold**

Job Order Cost Flows - Overview



Job Order Cost System



Job Order Cost Flow

Two Major Steps in Flows of Costs

- **Accumulate** the manufacturing costs incurred

Raw Materials

Factory Labor

Manufacturing Overhead



- **Assign** the accumulated costs to the work done

Accumulating Manufacturing Cost

Raw Materials Costs

- Raw Materials are debited to **Raw Materials Inventory** when purchased.
- At this point, the cost of materials are not assigned to specific jobs or orders.

Example:

On January 4, Wallace Manufacturing Company purchases 2,000 handles at \$5 per unit (\$10,000) and 800 modules at \$40 per unit (\$32,000) for a total cost of \$42,000.

Jan. 4	Raw Materials Inventory	42,000	
	Accounts Payable		42,000
	(Purchase of raw materials on account)		

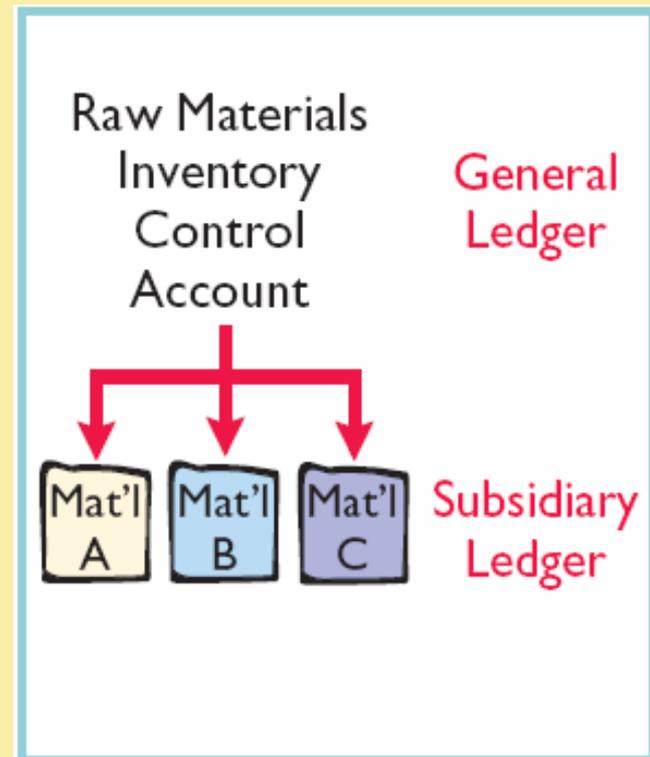
Accumulating Manufacturing Cost

Raw Materials Inventory

A *General Ledger Account*

is

A *Control Account* that summarizes the detailed data regarding specific inventory accounts in the *Subsidiary Ledger*



Accumulating Manufacturing Cost

Raw Materials Costs - Continued

- The subsidiary ledger consists of individual records for each item of raw materials
 - May be accounts or manually/mechanically prepared cards
 - May be kept as computer data files
- The records are referred to as *materials inventory records* or *stores ledger cards*

Item: Handles							Part No: AA2746		
		Receipts		Issues			Balance		
Date	Units	Cost	Total	Units	Cost	Total	Units	Cost	Total
1/4	2,000	\$5	\$10,000				2,000	\$5	\$10,000

Accumulating Manufacturing Cost

Raw Materials Costs - Continued

- Postings are made daily to the subsidiary ledger
- After all postings, the sum of the balances in the raw materials subsidiary ledger equals the balance in the Raw Materials Inventory control account



Accumulating Manufacturing Cost

Factory Labor Costs

- Procedures for accumulating factory labor costs similar to those for computing the payroll for a merchandising company



- Consists of
 - Gross earnings of factory workers
 - Employer payroll taxes on such earnings, and
 - Fringe benefits incurred by the employer

Accumulating Manufacturing Cost

Factory Labor Costs - Continued

Debited to **Factory Labor** when incurred

Example:

Wallace Manufacturing incurs \$32,000 of factory labor costs, of which \$27,000 relates to wages payable and \$5,000 relates to payroll taxes payable in January.

Jan. 31	Factory Labor	32,000	
	Factory Wages Payable		27,000
	Employer Payroll Taxes Payable		5,000
	(To record factory labor costs)		

Accumulating Manufacturing Cost

Manufacturing Overhead Costs

- Many types of overhead costs
For example, machinery repairs, indirect materials, and indirect labor
- *Debit to Manufacturing Overhead*
Daily as incurred or
Periodically through adjusting entries
- Manufacturing overhead is a *control account*
Subsidiary ledger consists of individual accounts for each type of cost

Accumulating Manufacturing Cost

Manufacturing Overhead Costs - Continued

Example:

The following is a *summary entry* to record the totals from multiple transactions that occurred during January for the Wallace Manufacturing Company.

Jan. 31	Manufacturing Overhead	13,800	
	Utilities Payable		4,800
	Prepaid Insurance		2,000
	Accounts Payable (for repairs)		2,600
	Accumulated Depreciation		3,000
	Property Taxes Payable		1,400
	(To record overhead costs)		

Accumulating Manufacturing Costs

Review Question

When incurred, factory labor costs are debited to:

- a. Work in Process.
- b. Factory Wages Expense.
- c. Factory Labor.
- d. Factory Wages Payable.

Assigning Manufacturing Costs to Work In Process

- Manufacturing costs are assigned to Work in Process with

Debits to Work in Process Inventory

Credits to Raw Materials Inventory
 Factory Labor
 Manufacturing Overhead

- Entries assigning costs to Work in Process are usually made *monthly*
- An essential accounting record in assigning costs to jobs is a *job cost sheet*

Assigning Manufacturing Costs to Work In Process

Job cost sheet

- Used to record costs of a specific job
- Used to determine the total and unit costs of a completed job
- Postings to job cost sheets are made daily
- Each entry to a Work in Process Inventory must be accompanied by a corresponding posting to one or more job cost sheets.

Assigning Manufacturing Costs to Work In Process

A Typical Job Cost Sheet

Job Cost Sheet			
Job No. _____	Quantity _____		
Item _____	Date Requested _____		
For _____	Date Completed _____		
Date	Direct Materials	Direct Labor	Manufacturing Overhead
Cost of completed job			
Direct materials			\$ _____
Direct labor			_____
Manufacturing overhead			_____
Total cost			\$ _____
Unit cost (total dollars ÷ quantity)			\$ _____

Assigning Manufacturing Costs to Work In Process

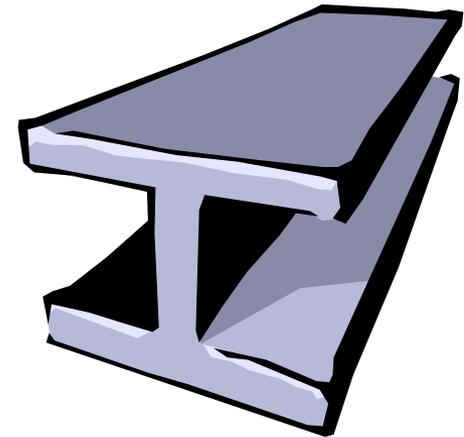
Assigning Raw Materials Cost

- Assigned to a job when materials are issued
- A *materials requisition slip*

Written authorization for issuing raw materials

May be directly issued to use on a job - *direct materials*,

May be considered indirect materials - *part of manufacturing overhead*



Assigning Manufacturing Costs to Work In Process

Materials Requisition Slip

Wallace Manufacturing Company Materials Requisition Slip				
Deliver to: <u>Assembly Department</u>		Req. No. <u>R247</u>		
Charge to: <u>Work in Process—Job No. 101</u>		Date: <u>1/6/08</u>		
Quantity	Description	Stock No.	Cost per Unit	Total
200	Handles	AA2746	\$5.00	\$1,000
Requested by <u>Bruce Howard</u>		Received by <u>Herb Crowley</u>		
Approved by <u>Kap Shin</u>		Costed by <u>Heather Remmers</u>		

Assigning Manufacturing Costs to Work In Process

Assigning Raw Materials Cost

- Requisition is prepared in *duplicate*

One copy stays in the storeroom as evidence of materials released

The original goes to accounting to determine the cost per unit and total cost of materials used

- Posted *daily* to individual job cost sheets and periodically journalized

Example:

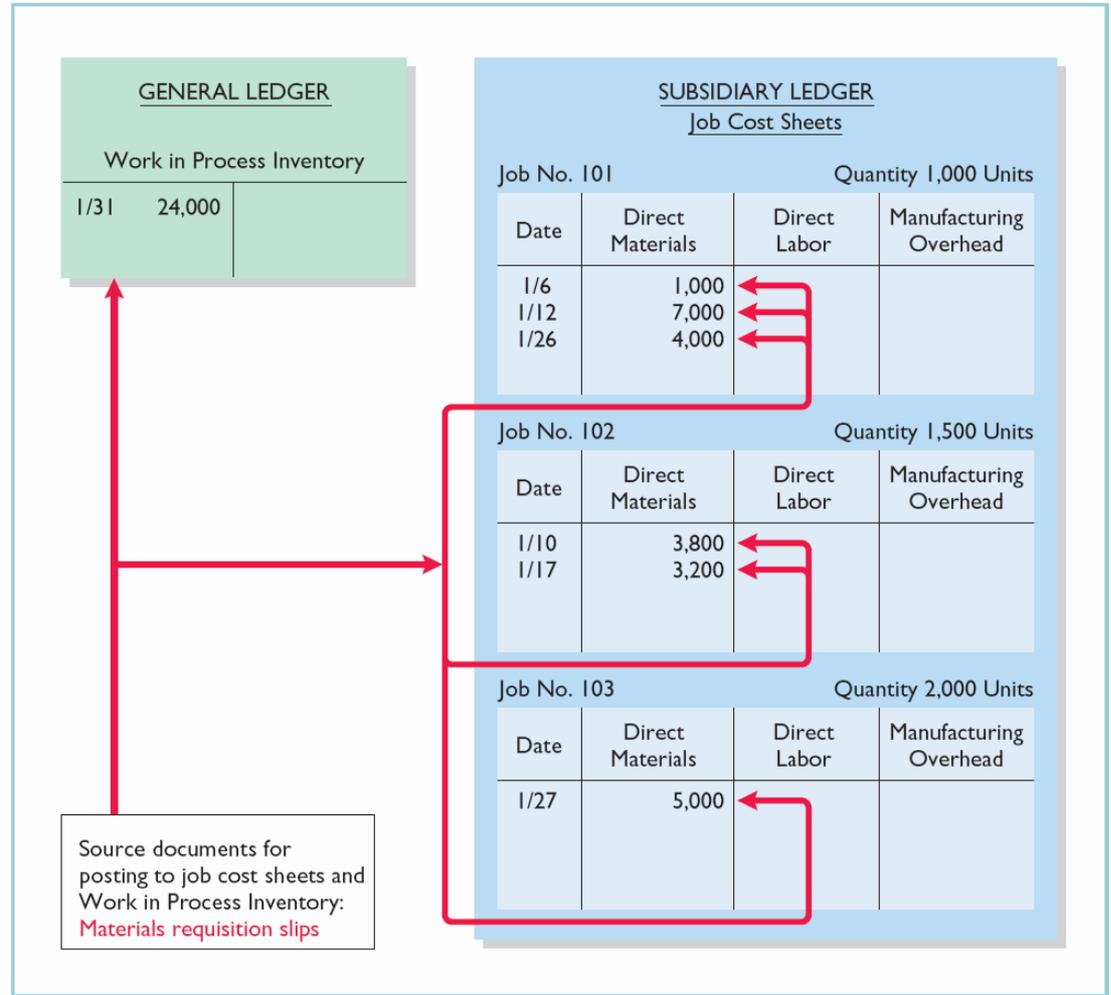
Assume that \$24,000 of direct materials and \$6,000 of indirect materials are used by Wallace Company in January.

Jan. 31	Work in Process Inventory	24,000	
	Manufacturing Overhead	6,000	
	Raw Materials Inventory		30,000
	(To assign materials to jobs and overhead)		

Assigning Manufacturing Costs to Work In Process

Assigning Raw Materials Cost

The sum of the direct materials columns of the job cost sheets should **equal** the direct materials debited to Work in Process Inventory



Assigning Manufacturing Costs to Work In Process

Assigning Factory Labor Cost

- Assigned to jobs on the basis of *time tickets*
- Time tickets are prepared when the work is performed
- Time tickets indicate
 - Employee
 - Hours worked
 - Account and job charged
 - Total labor cost



Assigning Manufacturing Costs to Work In Process

Time Ticket

Wallace Manufacturing Company
Time Ticket

Employee John Nash Date: 1/6/08
Charge to: Work in Process Employee No. 124
Job No. 101

Time			Hourly Rate	Total Cost
Start	Stop	Total Hours		
0800	1200	4	10.00	40.00

Approved by Bob Kadler

Costed by M. Cher

Assigning Manufacturing Costs to Work In Process

Assigning Factory Labor

Time tickets are sent to payroll to be sorted, totaled, and journalized

- *Work in Process* is debited for direct labor costs
- *Manufacturing overhead* is debited for indirect labor costs
- Factory labor is left with a *zero* balance

Example:

Assume that total factory labor cost is \$32,000 of total factory labor cost which consists of \$28,000 of direct labor cost and \$4,000 of indirect labor cost.

Jan. 31	Work in Process Inventory	28,000	
	Manufacturing Overhead	4,000	
	Factory Labor		32,000
	(To assign labor to jobs and overhead)		

Assigning Manufacturing Costs to Work In Process

GENERAL LEDGER		SUBSIDIARY LEDGER Job Cost Sheets			
Work in Process Inventory		Job No. 101		Quantity 1,000 Units	
1/31	24,000	Date	Direct Materials	Direct Labor	Manufacturing Overhead
1/31	28,000	1/6	1,000		
		1/10		9,000	
		1/12	7,000		
		1/26	4,000		
		1/31		6,000	
		Job No. 102		Quantity 1,500 Units	
		Date	Direct Materials	Direct Labor	Manufacturing Overhead
		1/10	3,800		
		1/15		4,000	
		1/17	3,200		
		1/22		5,000	
		Job No. 103		Quantity 2,000 Units	
		Date	Direct Materials	Direct Labor	Manufacturing Overhead
		1/27	5,000		
		1/29		4,000	

Source documents for posting to job cost sheets and Work in Process Inventory: Time tickets	
--	--

Job Cost Sheets After Posting

The sum of the direct labor columns of the job cost sheets should **equal** the direct labor debited to Work in Process Inventory.

Assigning Manufacturing Costs to Work in Process

Review Question

The source documents for assigning material and factory labor costs to job cost sheets are:

- a. Invoices and time tickets.
- b. Invoices and payroll register.
- c. Materials requisition slips and payroll register.
- d. Materials requisition slips and time tickets.

Assigning Manufacturing Costs to Work In Process

Assigning Manufacturing Overhead

- Relates to production operations *as a whole*
- Cannot be assigned to specific jobs based on actual costs incurred
- Must be assigned to work in process and to specific jobs *on an estimated basis* through the use of a

Predetermined Overhead Rate

Assigning Manufacturing Costs to Work In Process

Predetermined Overhead Rate

- Based on the relationship between *estimated* annual overhead costs and *expected* annual operating activity
- Expressed in terms of an activity base such as
 - Direct labor costs
 - Direct labor hours
 - Machine hours
 - Any other activity that is an equitable base for applying overhead costs to jobs

Assigning Manufacturing Costs to Work In Process

Predetermined Overhead Rate

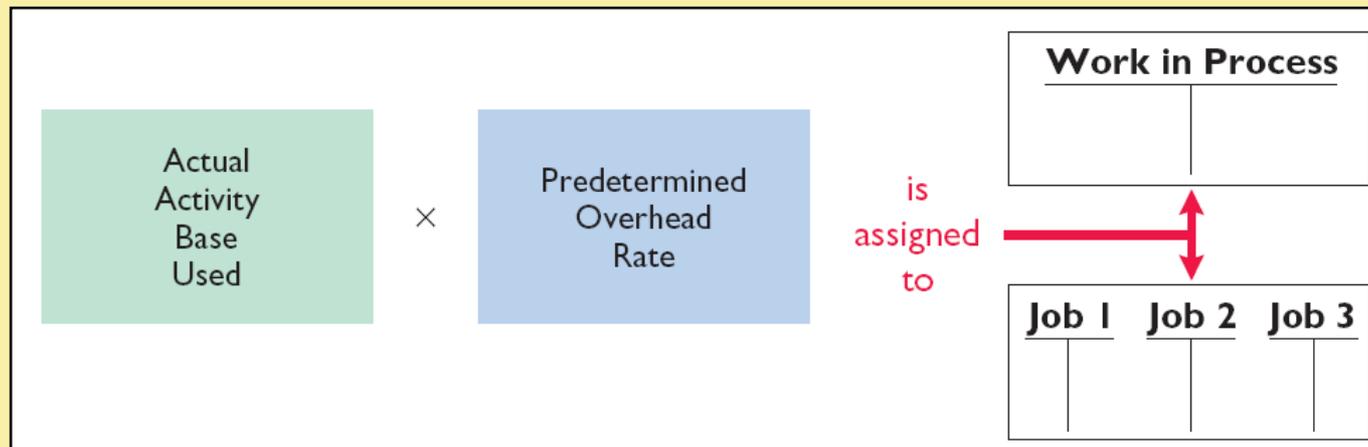
- Established at the *beginning* of the year
- May use a single, company-wide predetermined rate
- May use a different rate for each department and each department may have a different activity base
- **Formula** for computing the predetermined rate overhead rate is

$$\text{Estimated Annual Overhead Costs} \div \text{Expected Annual Operating Activity} = \text{Predetermined Overhead Rate}$$

Assigning Manufacturing Costs to Work In Process

Assigning Manufacturing Overhead

- Assigned to Work in Process during the period to get timely information about the cost of a completed job



- Current trend is to use machine hours as the activity base due to increased automation in manufacturing operations

Assigning Manufacturing Costs to Work In Process

Example:

At Wallace Manufacturing, *direct labor cost* is the activity base.

Estimated annual costs:

Overhead costs	\$280,000
Direct labor costs	\$350,000

The predetermined overhead rate is $\$280,000 \div \$350,000 = 80\%$.

Overhead applied is **\$22,400**
(\$28,000 January direct labor costs X 80%)
and recorded as follows:

Jan. 31	Work in Process Inventory	22,400	
	Manufacturing Overhead		22,400
	(To assign overhead to jobs)		

Assigning Manufacturing Costs to Work In Process

At the End of Each Month:

The balance in the Work in Process Inventory should **equal** the sum of the costs shown on the job cost sheets of unfinished jobs.

Work in Process Inventory			Job Cost Sheets	
Jan. 31	24,000		No. 101	\$39,000
31	28,000		102	23,200
31	22,400		103	12,200
	74,400	←		\$74,400

Assigning Manufacturing Overhead to Work in Process

Review Question

The formula for computing the predetermined manufacturing overhead rate is estimated annual overhead costs divided by an expected annual operating activity, expressed as:

- a. Direct labor cost.
- b. Direct labor hours.
- c. Machine hours.
- d. Any of the above.

Assigning Costs to Finished Goods

Job Cost Sheet			
Job No.	101	Quantity	1,000
Item	Magnetic Sensors	Date Requested	February 5
For	Tanner Company	Date Completed	January 31
Date	Direct Materials	Direct Labor	Manufacturing Overhead
1/6	\$ 1,000		
1/10		\$ 9,000	\$ 7,200
1/12	7,000		
1/26	4,000		
1/31		6,000	4,800
	\$ 12,000	\$ 15,000	\$ 12,000
Cost of completed job			
Direct materials			\$ 12,000
Direct labor			15,000
Manufacturing overhead			12,000
Total cost			\$ 39,000
Unit cost ($\$39,000 \div 1,000$)			\$ 39.00

When a job is completed, the costs are summarized and the job cost sheet is completed.

Assigning Costs to Finished Goods

- The entry for Wallace Manufacturing to transfer its total cost to Finished Goods Inventory is

Jan. 31	Finished Goods Inventory	39,000	
	Work in Process Inventory		39,000
	(To record completion of Job No. 101)		

- Units remain in Finished Goods Inventory until sold

Assigning Costs to Cost of Goods Sold

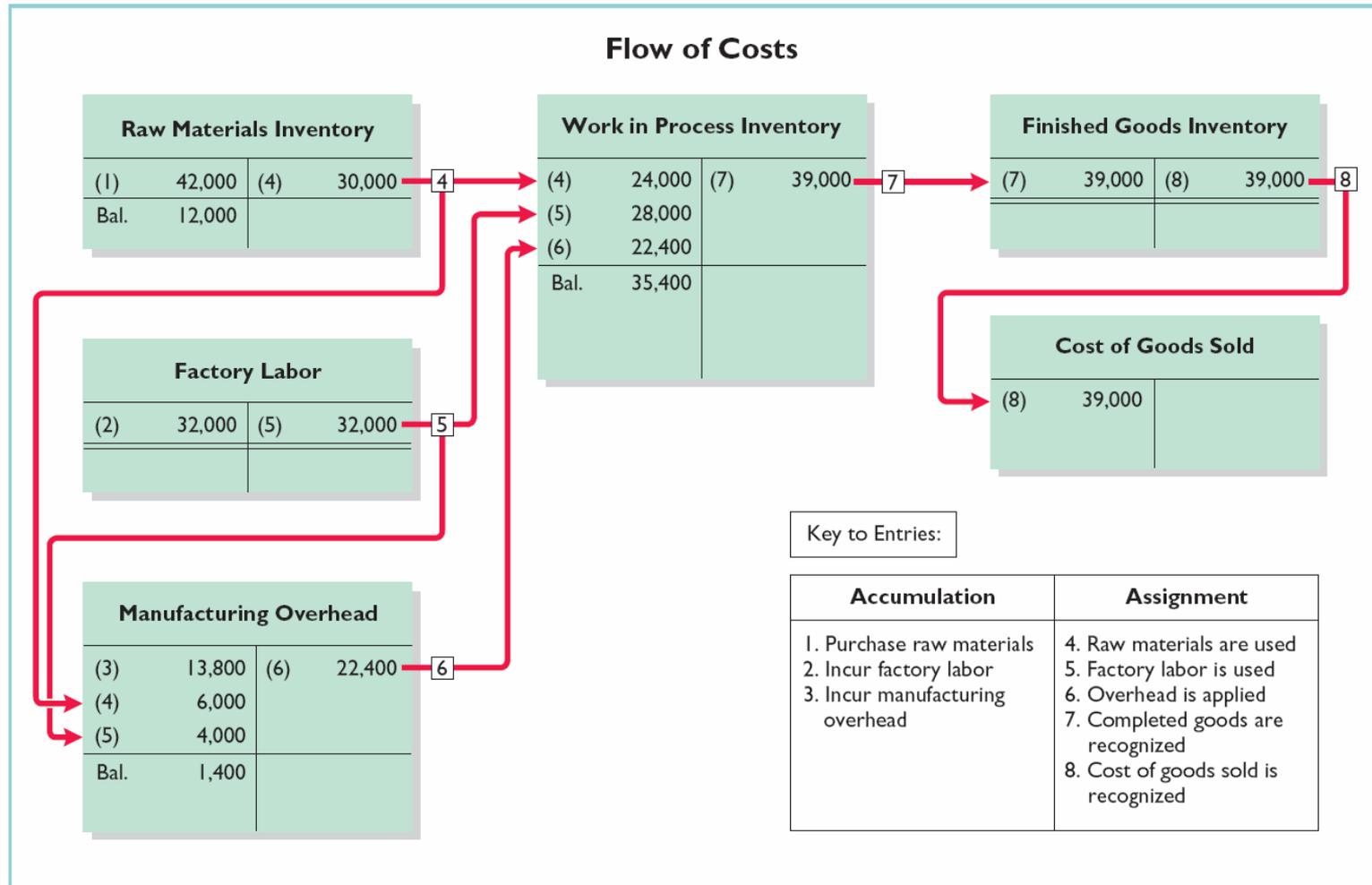
Cost of goods sold is recognized when a sale occurs

Example:

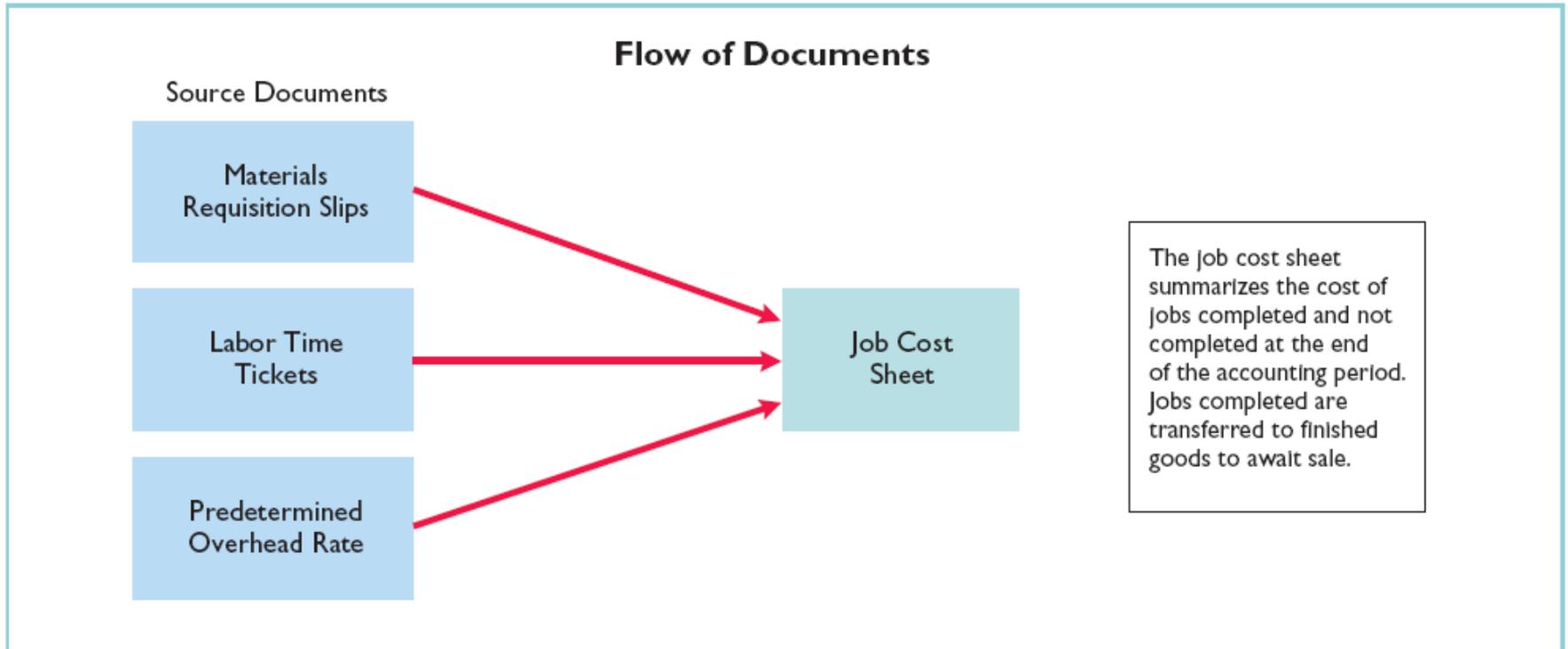
On January 31 Wallace Manufacturing sells Job No. 101, costing \$39,000, for \$50,000.

Jan. 31	Accounts Receivable	50,000	
	Sales		50,000
	(To record sale of Job No. 101)		
31	Cost of Goods Sold	39,000	
	Finished Goods Inventory		39,000
	(To record cost of Job No. 101)		

Summary of Job Order Cost Flows



Summary of Job Order Cost Flows



Reporting Job Cost Data

- The cost of goods manufactured schedule now shows manufacturing overhead *applied* rather than actual overhead costs
- Applied overhead is added to direct materials and direct labor to determine total manufacturing costs

WALLACE MANUFACTURING COMPANY		
Cost of Goods Manufactured Schedule		
For the Month Ended January 31, 2008		
Work in process, January 1		\$ -0-
Direct materials used	\$24,000	
Direct labor	28,000	
Manufacturing overhead applied	<u>22,400</u>	
Total manufacturing costs		<u>74,400</u>
Total cost of work in process		74,400
Less: Work in process, January 31		<u>35,400</u>
Cost of goods manufactured		<u><u>\$39,000</u></u>

Entries to Report Job Cost Data

Review Question

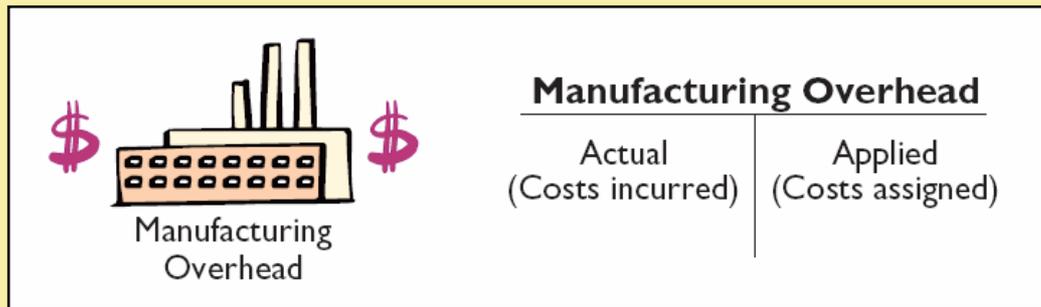
In M Company, Job No. 26 is completed at a cost of \$4,500 and later sold for \$7,000 cash. A correct entry is:

- a. Debit Finished Goods Inventory \$7,000 and credit Work in Process Inventory \$7,000.
- b. Debit Cost of Goods Sold \$7,000 and credit Finished Goods Inventory \$7,000.
- c. Debit Finished Goods Inventory \$4,500 and credit Work in Process Inventory \$4,500.
- d. Debit Accounts Receivable \$7,000 and credit Sales \$7,000.

Under- or Overapplied Manufacturing Overhead

- A *debit balance* in manufacturing overhead means that overhead is underapplied

*Overhead assigned to work in process is **less** than overhead incurred*



- A *credit balance* in manufacturing overhead means that overhead is overapplied

*Overhead assigned to work in process is **greater** than overhead incurred*

Under- or Overapplied Manufacturing Overhead

Any *year end balance* in manufacturing overhead is eliminated by adjusting cost of goods sold.

- *Underapplied overhead is debited to CGS*
- *Overapplied overhead is credited to CGS*

Example:

Wallace Manufacturing Company has a \$2,500 credit balance in Manufacturing Overhead at December 31. The adjusting entry for the overapplied overhead is:

Dec. 31	Manufacturing Overhead	2,500	
	Cost of Goods Sold		2,500
	(To transfer overapplied overhead to cost of goods sold)		

Under- or Overapplied Manufacturing Overhead

Review Question

Manufacturing overhead is underapplied if:

- a. Actual overhead is less than applied.
- b.** Actual overhead is greater than applied.
- c. The predetermined rate equals the actual rate.
- d. Actual overhead equals applied overhead.

Chapter Review - Brief Exercise 20-6

Marquis Company estimates that annual manufacturing overhead costs will be \$600,000. Estimated annual operating activity bases are: *direct labor cost \$500,000; direct labor hours 50,000; and machine hours 100,000.* Compute the predetermined overhead rate for each activity base.

<u>Base</u>	<u>Calculation</u>
DL Cost	$\$600,000 \div \$500,000 = 120\%$
DL Hours	$\$600,000 \div 50,000 = \$12/\text{DL hour}$
Machine Hrs	$\$600,000 \div 100,000 = \$6/\text{Mach hour}$

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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Dan R. Ward
Suzanne P. Ward

University of Louisiana at Lafayette

CHAPTER 21

PROCESS COST ACCOUNTING

Accounting Principles, Eighth Edition

Study Objectives

1. Understand who uses process cost systems.
2. Explain the similarities and differences between job order and process cost systems.
3. Explain the flow of costs in a process cost system.
4. Make the journal entries to assign manufacturing costs in a process cost system.

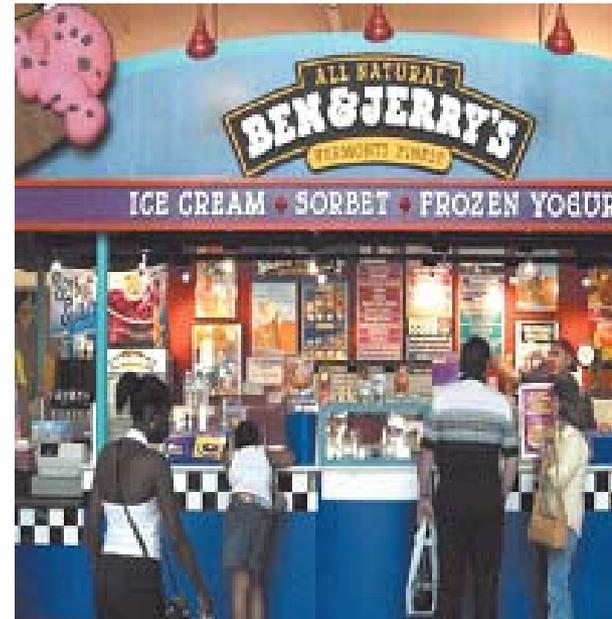
Study Objectives

5. Compute equivalent units.
6. Explain the four steps necessary to prepare a production cost report.
7. Prepare a production cost report.
8. Explain just-in-time (JIT) processing.
9. Explain activity-based costing (ABC).



Preview of Chapter

- Process cost accounting focuses on mass-production of products that are *identical or very similar in nature*.
- In contrast, job order cost accounting focuses on the individual job.



Process Cost Accounting

Nature of Process Cost Systems

- Uses
- Similarities and Differences
- Process Cost Flow
- Assignment of Manufacturing Costs

Equivalent Units

- Weighted-Average Method
- Refinements
- Production Cost Report

Comprehensive Example of Process Costing

- Physical Units
- Equivalent Units of Production
- Unit Production Costs
- Cost Reconciliation Schedule
- Production Cost Report
- Costing Systems – Final Comment

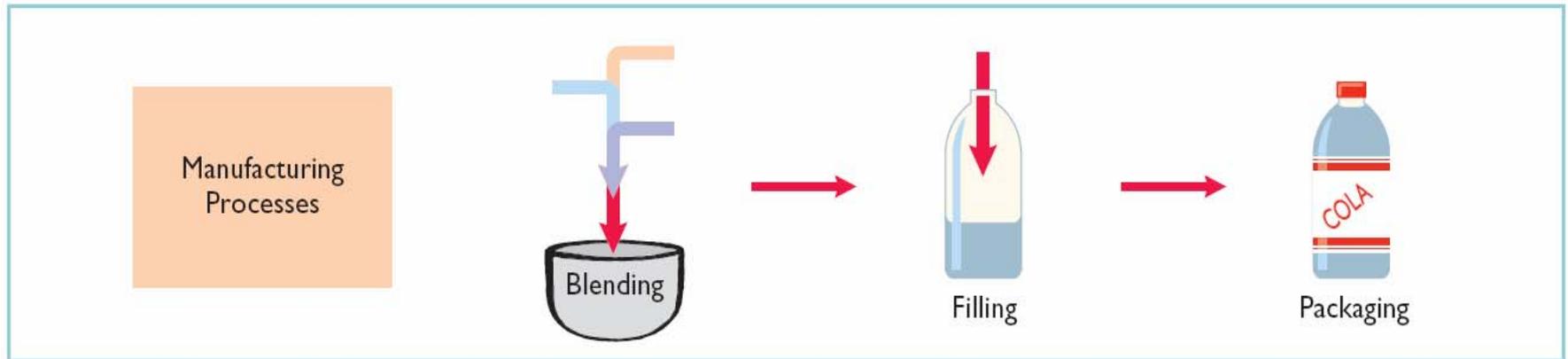
Contemporary Developments

- Just-in-Time Processing
- Activity-Based Costing

Nature of Process Cost Systems

Use to apply costs to *similar* products that are *massed produced* in a *continuous* fashion

Examples include the production of
Cereal, Paint, and Soft Drinks



Comparison of Products Produced Under Process and Job Order Cost Systems

Process Cost System Company	Product	Job Order Cost System Company	Product
Coca-Cola, PepsiCo	Soft drinks 	Young & Rubicam, J. Walter Thompson	Advertising 
ExxonMobil, Royal Dutch Shell	Oil 	Walt Disney, Warner Brothers	Motion pictures 
Intel, Advanced Micro Devices	Computer chips 	Center Ice Consultants, Ice Pro	Ice rinks 
Dow Chemical, DuPont	Chemicals 	Kaiser, Mayo Clinic	Patient health care 

Let's Review

Which of the following items is *not* a characteristic of a process cost system:

- a. Once production begins, it continues until the finished product emerges.
- b. The focus is on continually producing homogenous products.
- c. When the finished product emerges, all units have precisely the same amount of materials, labor, and overhead.
- d. The products produced are heterogenous in nature.

Job Order Cost and Process Cost Flow

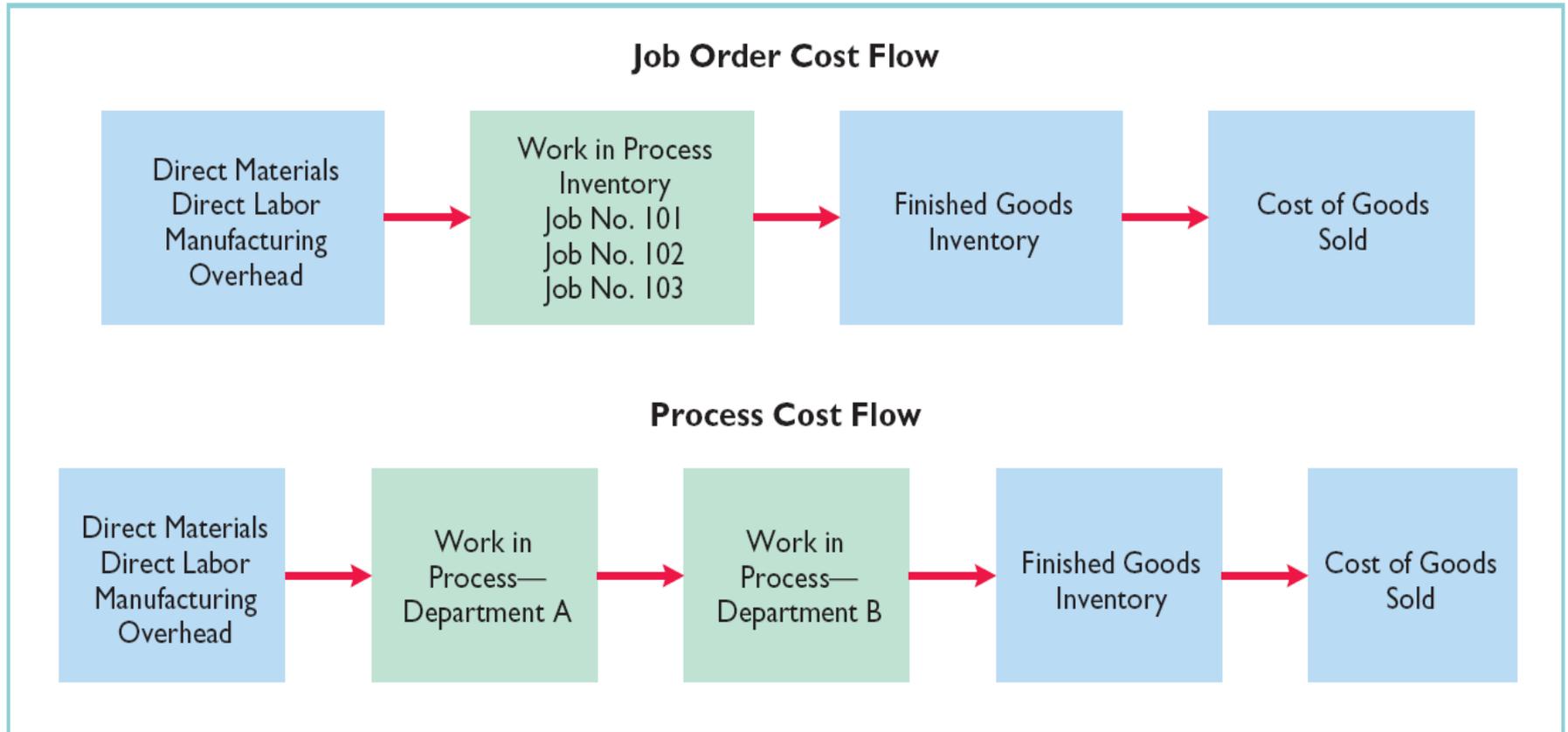
Job Order Cost Systems

- Costs are assigned to *each job*.
- Products have *unique characteristics*.

Process Cost Systems

- Costs are tracked through a *series of connected manufacturing processes or departments*.
- Products are *uniform* or relatively homogeneous and produced in a *large volume*.

Job Order Cost vs Process Cost Flow



Similarities and Differences in Cost Systems

Similarities

- The accumulation of costs is the same in both systems.
- Both costing systems track the three manufacturing cost elements: direct materials, direct labor, and manufacturing overhead.
- Costs are assigned to the same general ledger accounts in both costing systems.

However, the methods of assigning the costs differ significantly.

Similarities and Differences in Cost Systems

Differences

- The number of work in process accounts
 - Job Order - one work in process account*
 - Process - multiple work in process accounts*
- Documents used to track costs
 - Job Order - job cost sheets*
 - Process - production cost reports*

Similarities and Differences in Cost Systems

Differences

- The point at which costs are totaled
 - Job Order - when job is completed*
 - Process - at end of period of time*
- Unit cost computation
 - Job Order - total cost per job divided by units in job*
 - Process - total manufacturing costs for the period divided by units produced during the period*

Major Differences Between Job Order and Process Cost Systems

Features	Job Order Cost System	Process Cost System
Work in process accounts	<ul style="list-style-type: none"> • One work in process account 	<ul style="list-style-type: none"> • Multiple work in process accounts
Documents used	<ul style="list-style-type: none"> • Job cost sheets 	<ul style="list-style-type: none"> • Production cost reports
Determination of total manufacturing costs	<ul style="list-style-type: none"> • Each job 	<ul style="list-style-type: none"> • Each period
Unit-cost computations	<ul style="list-style-type: none"> • $\text{Cost of each job} \div \text{Units produced for the job}$ 	<ul style="list-style-type: none"> • $\text{Total manufacturing costs} \div \text{Units produced during the period}$

Let's Review

Indicate which of the following statements is *not* correct:

- a. Both a job order and a process cost system track the same three manufacturing cost elements - direct materials, direct labor, and manufacturing overhead.
- b. In a job order cost system, only one work in process account is used, whereas in a process cost system, multiple work in process accounts are used..
- c. Manufacturing costs are accumulated the same way in a job order and in a process cost system.
- d. Manufacturing costs are assigned the same way in a job order and in a process cost system.

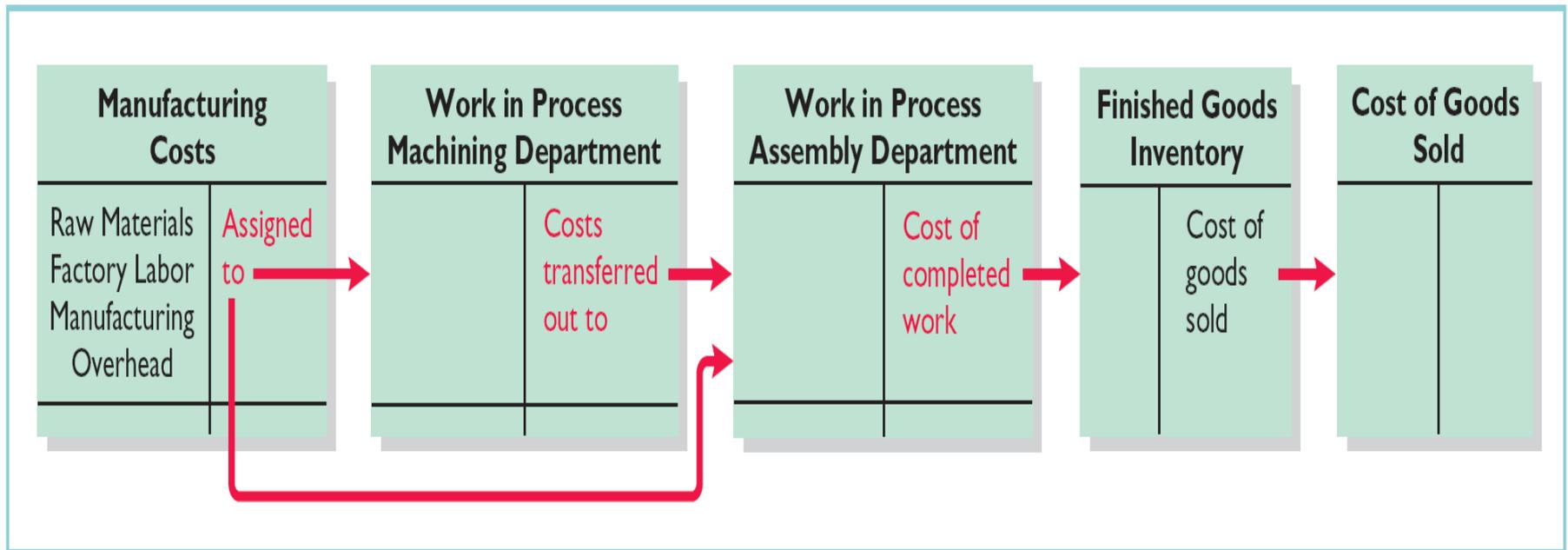
Process Cost Flows Illustrated

Example - Tyler Company

- Maker of automatic can openers
- Manufacturing consists of two processes:
 - Machining* - raw materials are shaped, honed, and drilled
 - Assembly* - parts assembled and packaged
- Materials, labor, and manufacturing overhead added in both departments

Process Cost Flows Illustrated

Example - Tyler Company



Assignment of Manufacturing Costs

- **Accumulation** of materials, labor, and overhead costs is *same* as in job order costing

Debit Raw Materials Inventory for purchases of raw materials

Debit Factory Labor for factory labor incurred

Debit Manufacturing Overhead for overhead cost incurred

- However, **assignment** of the three manufacturing cost elements to Work in Process is *different*

Assignment of Manufacturing Costs

Materials

- A process cost system requires fewer material requisition slips than a job order cost system

Materials are used for processes and **not** specific jobs

Requisitions are for *larger quantities* of materials

- The journal entry to record materials used:

Work in Process—Machining	XXXX	
Work in Process—Assembly	XXXX	
Raw Materials Inventory		XXXX
(To record materials used)		

Assignment of Manufacturing Costs

Factory Labor Costs

- Time tickets are used in both systems
- **All labor costs** incurred within a production department are a **cost of processing**.
- The journal entry to record factory labor costs:



Work in Process—Machining	XXXX	
Work in Process—Assembly	XXXX	
Factory Labor		XXXX
(To assign factory labor to production)		

Assignment of Manufacturing Costs

Manufacturing Overhead Costs

Objective of assigning overhead -
allocate overhead to departments on an
objective and equitable basis

Use the activity that *"drives"*
or causes the costs



Machine time used -
primary driver in continuous manufacturing
operations

Assignment of Manufacturing Costs

Manufacturing Overhead Costs

The entry to allocate overhead to the two processes is:

Work in Process—Machining	XXXX	
Work in Process—Assembly	XXXX	
Manufacturing Overhead (To assign overhead to production)		XXXX

Assignment of Manufacturing Costs

Entries to Transfer Costs Through System

Monthly Entry to transfer goods to next department:

Work in Process—Assembly	XXXXX	
Work in Process—Machining		XXXXX
(To record transfer of units to the Assembly Department)		

Entry to transfer completed goods to Finished Goods:

Finished Goods Inventory	XXXXX	
Work in Process—Assembly		XXXXX
(To record transfer of units to finished goods)		

Entry to record Cost of Goods sold at the time of sale:

Cost of Goods Sold	XXXXX	
Finished Goods Inventory		XXXXX
(To record cost of units sold)		

Let's Review

In making the journal entry to assign raw materials costs:

- a. The debit is to Finished goods Inventory.
- b.** The debit is often to two or more work in process accounts.
- c. The credit is generally to two or more work in process accounts.
- d. The credit is to Finished Goods Inventory.

Equivalent Units

Example - XYZ College

Compute the cost of instruction at XYZ College per full-time equivalent student based on the following information:

Total cost of instruction is \$9,000,000.

There are 900 full-time students and 1,000 part-time students.

Part-time students take 60% of the classes of a regular student.

Full-time Students	+	Equivalent Units of Part-time Students	=	Full-time Equivalent Students
900	+	(60% × 1,000)	=	1,500

Equivalent Units Example Continued

Cost of instruction
per full-time equivalent student

equals

Total cost of instruction
divided by
Number of full-time equivalent students

$$\$9,000,000 / 1,500 = \$6,000$$

Equivalent Units - Weighted Average Method

- Considers the degree of completion (weighting) of units completed and transferred out and units in ending work in process
- Most widely used method
- Beginning work in process *not* part of computation of equivalent units

$$\begin{array}{l} \text{Units Completed and} \\ \text{Transferred Out} \end{array} + \begin{array}{l} \text{Equivalent Units of} \\ \text{Ending Work in} \\ \text{Process} \end{array} = \text{Equivalent Units of} \\ \text{Production}$$

Equivalent Units - Refinements

Weighted Average Method

Example

The Kellogg Company uses 3 departments (Mixing, Baking, and Freezing/Packaging) to produce waffles.

Information for the Mixing Department is:

MIXING DEPARTMENT			
	Physical Units	Percentage Complete	
		Materials	Conversion Costs
Work in process, June 1	100,000	100%	70%
Started into production	800,000		
Total units	900,000		
Units transferred out	700,000		
Work in process, June 30	200,000	100%	60%

Equivalent Units - Refinements

Weighted Average Method

Example - Continued

Mixing Department Raw Materials information:

All ingredients (materials) are added at the beginning of the mixing process

All units, regardless of degree of completion, are 100% complete as to materials

Mixing Department Conversion Cost information:

Conversion costs refers to the **sum of labor costs and overhead costs.**

The units are *70% complete* with respect to conversion costs.

Equivalent Units - Refinements

Weighted Average Method

Example - Continued

Computation of Mixing Department's Equivalent Units

	<u>Equivalent Units</u>	
	<u>Materials</u>	<u>Conversion Costs</u>
Units transferred out	700,000	700,000
Work in process, June 30		
200,000 × 100%	200,000	
200,000 × 60%		120,000
Total equivalent units	<u>900,000</u>	<u>820,000</u>

Equivalent Units

Refined Equivalent Units of Production Formula

Units Completed and Transferred Out— Materials	+	Equivalent Units of Ending Work in Process—Materials	=	Equivalent Units of Production— Materials
Units Completed and Transferred Out— Conversion Costs	+	Equivalent Units of Ending Work in Process—Conversion Costs	=	Equivalent Units of Production— Conversion Costs

Let's Review

The Mixing Department's output during the period consists of 20,000 units completed and transferred out, and 5,000 units in ending work in process 60% complete as to materials and conversions costs. Beginning inventory is 1,000 units, 40% complete as to materials and conversion costs. The equivalent units of production are:

a. 22,600

b. 23,000

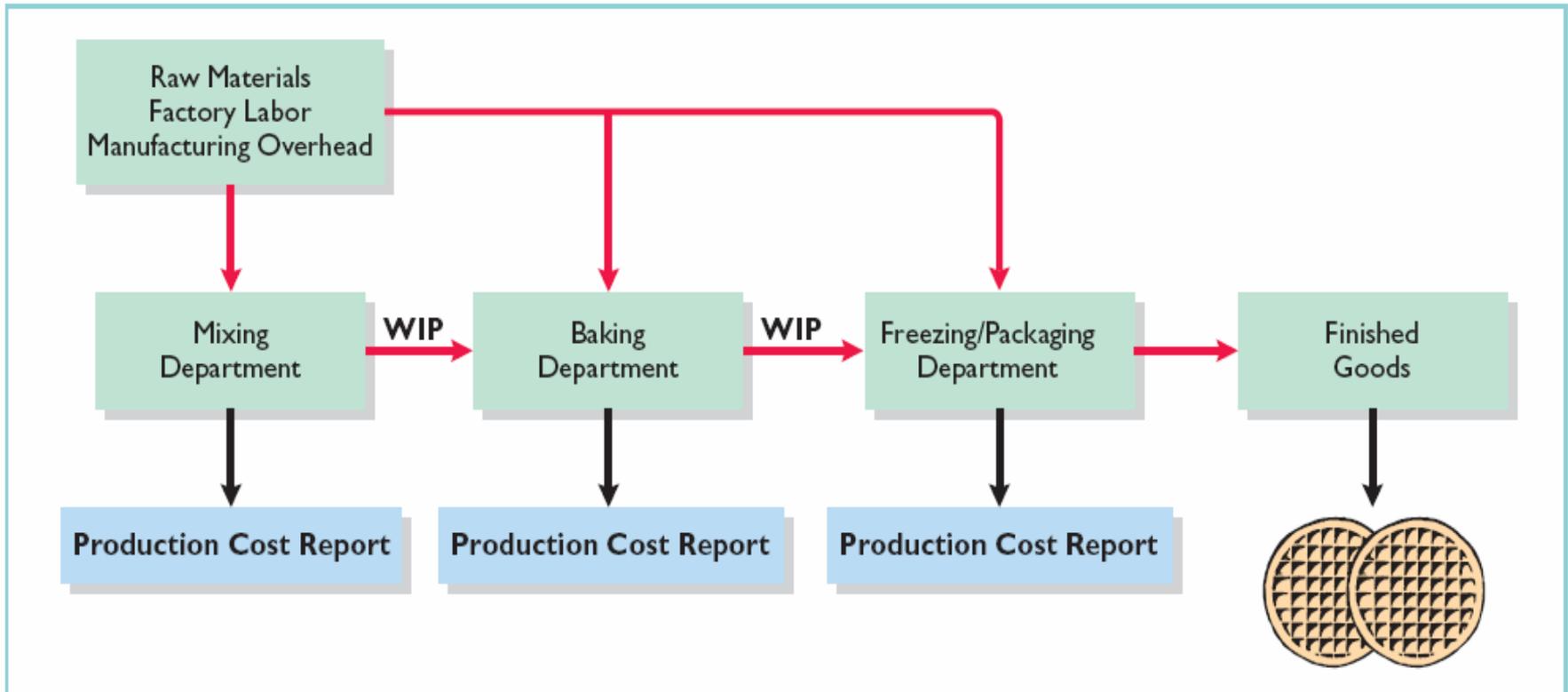
c. 24,000

d. 25,000

Production Cost Report

- Key document used to understand activities.
- Prepared for *each* department and shows:
 - Production Quantity
 - Cost data
- Four steps in preparation:
 - Step 1: Compute physical unit flow
 - Step 2: Compute equivalent units of production
 - Step 3: Compute unit production costs
 - Step 4: Prepare a cost reconciliation schedule

Flow of Costs in Making Eggo Waffles



Comprehensive Example of Process Costing

Basic Information

MIXING DEPARTMENT	
Units	
Work in process, June 1	100,000
Direct materials: 100% complete	
Conversion costs: 70% complete	
Units started into production during June	800,000
Units completed and transferred out to Baking Department	700,000
Work in process, June 30	200,000
Direct materials: 100% complete	
Conversion costs: 60% complete	
Costs	
Work in process, June 1	
Direct materials: 100% complete	\$ 50,000
Conversion costs: 70% complete	35,000
Cost of work in process, June 1	<u>\$ 85,000</u>
Costs incurred during production in June	
Direct materials	\$400,000
Conversion costs	170,000
Costs incurred in June	<u>\$570,000</u>

Comprehensive Example Continued

Step 1: Compute Physical Unit Flow.

- **Physical units**

actual units to be accounted for during a period, regardless of work performed

- **Total units to be accounted for**

units started (or transferred) into production during the period + *units in production* at *beginning* of period

- **Total units accounted for**

units transferred out during period + *units in production* at *end* of period

Comprehensive Example Continued

Step 1: Compute Physical Unit Flow -continued

MIXING DEPARTMENT

	<u>Physical Units</u>
Units to be accounted for	
Work in process, June 1	100,000
Started (transferred) into production	800,000
Total units	<u>900,000</u>
Units accounted for	
Completed and transferred out	700,000
Work in process, June 30	200,000
Total units	<u>900,000</u>

Comprehensive Example Continued

Step 2: Compute Equivalent Units of Production

- Measure of a department's productivity
- Two computations required:

one for materials and one for conversion costs

- Beginning work in process ignored

	Equivalent Units	
	Materials	Conversion Costs
Units transferred out	700,000	700,000
Work in process, June 30		
200,000 × 100%	200,000	
200,000 × 60%		120,000
Total equivalent units	900,000	820,000

Comprehensive Example Continued

Step 3: Compute Unit Production Costs

- Costs expressed in terms of equivalent units of production
- When equivalent units of production are *different* for materials and for conversion costs, three unit costs are computed:

Materials

Conversion

Total Manufacturing

Comprehensive Example Continued

Step 3: Compute Unit Production Cost - continued

- Total Materials Cost Computation:

Direct Materials Cost in Beginning Work in Process	\$ 50,000
Conversion Costs Added to Production During Month	<u>400,000</u>
Total Materials Costs	\$450,000

- The Computation of Unit Materials Costs:

Total Materials Cost	÷	Equivalent Units of Materials	=	Unit Materials Cost
\$450,000	÷	900,000	=	\$0.50

Comprehensive Example Continued

Step 3: Compute Unit Production Cost - continued

● Conversion Cost Computation:

Conversion Costs in Beginning Work in Process	\$ 35,000
Conversion Costs Added to Production During Month	<u>170,000</u>
Total Conversion Costs	\$205,000

● The Computation of Unit Conversion Costs:

Total Conversion Costs	÷	Equivalent Units of Conversion Costs	=	Unit Conversion Cost
\$205,000	÷	820,000	=	\$0.25

Comprehensive Example Continued

Step 3: Compute Unit Production Cost - continued

- Total Manufacturing Cost Per Unit

The computation of unit total manufacturing cost:

Unit Materials Cost	+	Unit Conversion Cost	=	Total Manufacturing Cost per Unit
\$0.50	+	\$0.25	=	\$0.75

Comprehensive Example Continued

Step 4: Prepare Cost Reconciliation Schedule

● Costs Charged to Mixing Department:

Cost of Beginning Work in Process	\$ 85,000
Costs Started into Production During Period	<u>570,000</u>
Total Costs to be Accounted For	\$ 655,000

MIXING DEPARTMENT

Cost Reconciliation Schedule

Costs accounted for		
Transferred out (700,000 × \$0.75)		\$ 525,000
Work in process, June 30		
Materials (200,000 × \$0.50)	\$100,000	
Conversion costs (120,000 × \$0.25)	<u>30,000</u>	<u>130,000</u>
Total costs		<u><u>\$655,000</u></u>

Production Cost Report - Mixing Department

Mixing Department						
Production Cost Report						
For the Month Ended June 30, 2008						
		Equivalent Units				
		Physical Units	Materials	Conversion Costs		
QUANTITIES		Step 1	Step 2			
Units to be accounted for						
Work in process, June 1		100,000				
Started into production		800,000				
Total units		900,000				
Units accounted for						
Transferred out		700,000	700,000	700,000		
Work in process, June 30		200,000	200,000	120,000	(200,000 × 60%)	
Total units		900,000	900,000	820,000		
COSTS		Step 3	Materials	Conversion Costs	Total	
Unit costs						
Costs in June			\$450,000	\$205,000	\$655,000	
Equivalent units		(a)	900,000	820,000		
Unit costs [(a) ÷ (b)]		(b)	\$0.50	\$0.25	\$0.75	
Costs to be accounted for						
Work in process, June 1					\$85,000	
Started into production					570,000	
Total costs					\$655,000	
Cost Reconciliation Schedule		Step 4				
Costs accounted for						
Transferred out (700,000 × \$0.75)					\$525,000	
Work in process, June 30						
Materials (200,000 × \$0.50)				\$100,000		
Conversion costs (120,000 × \$0.25)				30,000	130,000	
Total costs					\$655,000	

Let's Review

Largo Company has unit costs of \$10 for materials and \$30 for conversion costs. If there are 2,500 units in ending work in process, 40% complete as to conversion costs and fully complete as to materials cost, the total cost assignable to the ending work in process inventory is:

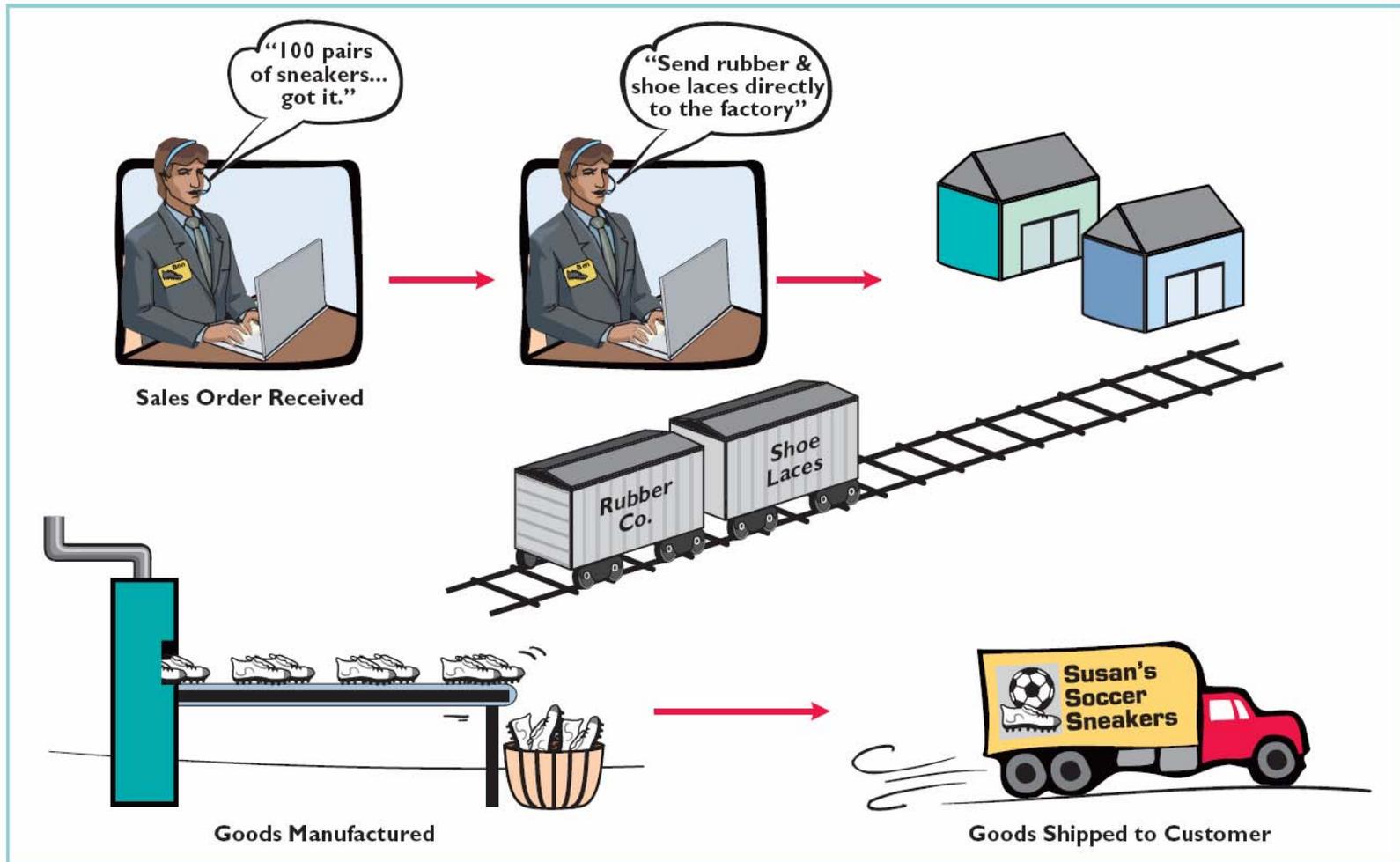
- a. \$45,000.
- b. \$55,000.
- c. \$75,000.
- d. \$100,000.

Contemporary Developments

Just-in-Time (JIT) Processing

- A processing system that is dedicated to having the right products or parts as they are needed
- **Objective:** To eliminate all manufacturing inventories to make funds and space available for more productive purposes
- **Elements of JIT:** Dependable suppliers; Multi-skilled workforce; Total quality control system
- **Benefits of JIT:** Reduced inventory; Enhanced product quality; Reduced rework and storage costs; Savings from improved flow of goods

Contemporary Developments - JIT



Contemporary Developments

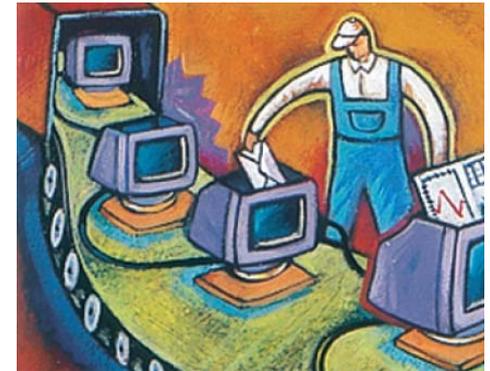
Activity-Based Costing (ABC)

- An overhead cost allocation system that focuses on activities performed in producing a product.
- **Traditional Costing System:** allocates overhead to products using predetermined unit-based output rate
- **ABC System:** allocates overhead to multiple activity cost pools and assigns cost pools to products using cost drivers that represent activities used
- **Assumptions of ABC:** All overhead costs for an activity must have the same cost driver and should respond proportionally to changes in the activity of the cost driver.

Contemporary Developments

Activity-Based Costing (ABC) - continued

- May be used with either a job order or a process costing system.
- **Primary Benefit:** More accurate and meaningful product costing
- **Secondary Benefit:** Improved cost data regarding an activity may lead to reduced costs for that activity
- **ABC** makes managers realize that *activities* not products ultimately determine company profitability



Chapter Review - Brief Exercise 21-8

Production costs chargeable to the Finishing Department in June in Castilla Company are materials \$15,000, labor \$29,500, overhead \$18,000. Equivalent units of production are materials 20,000 and conversion costs 19,000. **Compute the unit costs for materials and conversion costs.**

Unit costs for Materials:

$$\$15,000 \div 20,000 \text{ units} = \text{\$.75 per unit}$$

Unit costs for Conversion Costs:

$$\text{Conversion Costs} = \$29,500 + 18,000 = \$47,500$$

$$\$47,500 \div 19,000 = \text{\$2.50 per unit}$$

Total Manufacturing Costs per Unit:

$$\$0.75 + \$2.50 = \text{\$3.25 per unit}$$

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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Dan R. Ward
Suzanne P. Ward

University of Louisiana at Lafayette

CHAPTER 22

COST - VOLUME - PROFIT

Accounting Principles, Eighth Edition

Study Objectives

1. Distinguish between variable and fixed costs.
2. Explain the significance of the relevant range.
3. Explain the concept of mixed costs.
4. List the five components of cost-volume-profit analysis.
5. Indicate what contribution margin is and how it can be expressed
6. Identify the three ways to determine the break-even point.

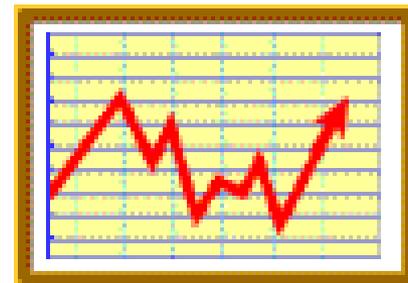
Study Objectives

7. Give the formulas for determining sales required to earn target net income
8. Define margin of safety, and give the formulas for computing it.
9. Describe the essential features of a cost-volume-profit income statement.



Preview of Chapter

- To manage any business, you must understand:
How costs respond to changes in sales volume
and
The effect of costs and revenues on profit
- To understand cost-volume-profit (CVP), you must know how costs behave



Cost-Volume-Profit

Cost Behavior Analysis

- Variable costs
- Fixed costs
- Relevant range
- Mixed costs
- Identifying variable and fixed costs

Cost-Volume- Profit Analysis

- Basic components
- CVP income statement
- Break-even analysis
- Target net income
- Margin of safety
- Changes in business environment
- CVP income statement revisited

Cost Behavior Analysis

- Cost Behavior Analysis is
the study of how specific costs respond to changes in the level of business activity.
- Some costs change; others remain the same
- Helps management plan operations and decide between alternative courses of action
- Applies to all types of businesses and entities

Cost Behavior Analysis - continued

- Starting point is **measuring key business activities**
- Activity levels may be expressed in terms of:
 - Sales dollars (in a retail company)
 - Miles driven (in a trucking company)
 - Room occupancy (in a hotel)
 - Dance classes taught (by a dance studio)
- Many companies use more than one measurement base



Cost Behavior Analysis - continued

- For an activity level to be useful:

Changes in the level or volume of activity should be correlated with changes in costs

- The activity level selected is called the *activity or volume index*

- The activity index:

Identifies the activity that causes changes in the behavior of costs

Allows costs to be classified according to their response to changes in activity as either:

Variable Costs

Fixed Costs

Mixed Costs

Variable Costs

- Costs that *vary in total directly and proportionately with changes in the activity level*
- Example: If the activity level **increases** 10 percent, total variable costs **increase** 10 percent
- Example: If the activity level **decreases** by 25 percent, total variable costs **decrease** by 25 percent
- Variable costs *remain constant per unit at every level of activity.*

Variable Costs - Example

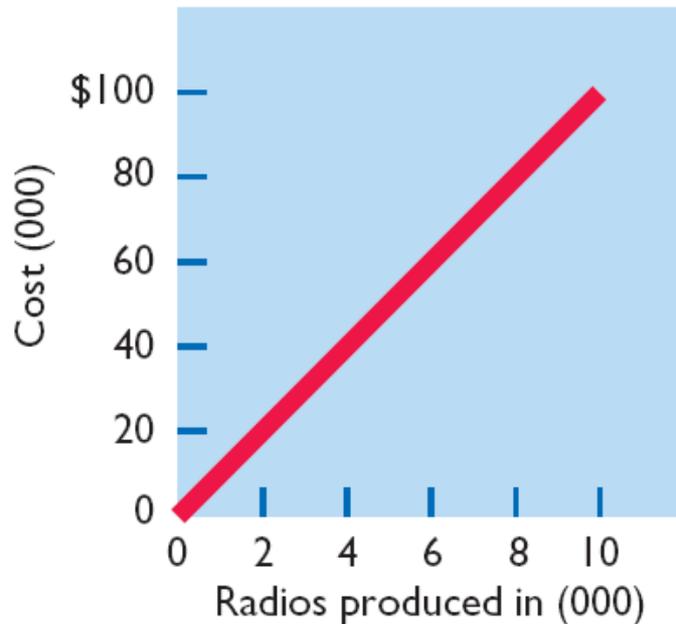
- Damon Company manufactures radios that contain a \$10 clock
- Activity index is the number of radios produced
- For each radio produced, the total cost of the clocks increases by \$10:

If 2,000 radios are made, the total cost of the clocks is \$20,000 ($2,000 \times \10)

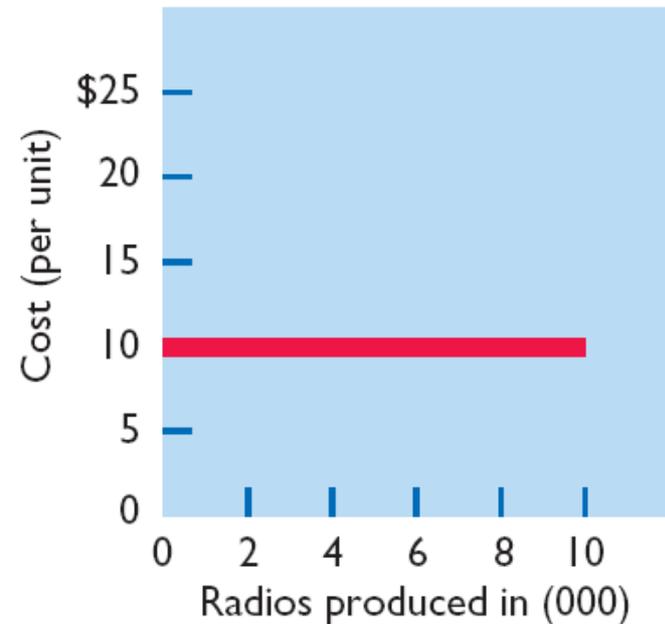
If 10,000 radios are made, the total cost of the clocks is \$100,000 ($10,000 \times \10)

Variable Costs - Graphs

(a)
Total Variable Costs
(Digital Clocks)



(b)
Variable Costs per Unit
(Digital Clocks)



Fixed Costs

- Costs that *remain the same in total* regardless of changes in the activity level.
- Per unit cost varies *inversely* with activity:
*As volume increases,
unit cost declines, and vice versa*
- Examples include:
 - Property taxes
 - Insurance
 - Rent
 - Depreciation on buildings and equipment

Fixed Costs - Example

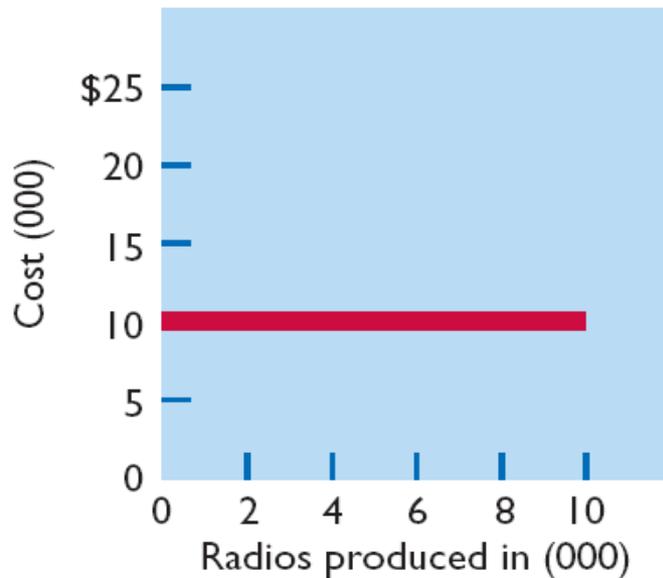
- Damon Company leases its productive facilities for \$10,000 per month
- Total fixed costs of the facilities remain constant at all levels of activity - \$10,000 per month
- On a *per unit* basis, the cost of rent decreases as activity increases and vice versa

At 2,000 radios, the unit cost is **\$5**
($\$10,000 \div 2,000$ units)

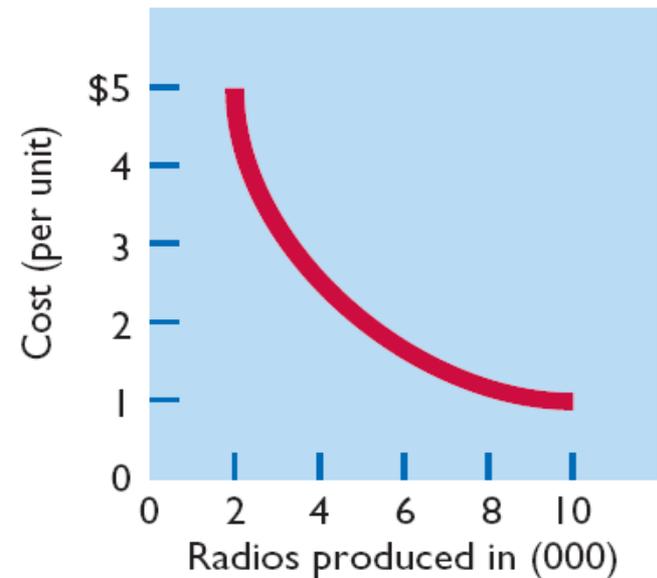
At 10,000 radios, the unit cost is **\$1**
($\$10,000 \div 10,000$ units)

Fixed Costs - Graphs

(a)
Total Fixed Costs
(Rent Expense)



(b)
Fixed Costs per Unit
(Rent Expense)



Let's Review

Variable costs are costs that:

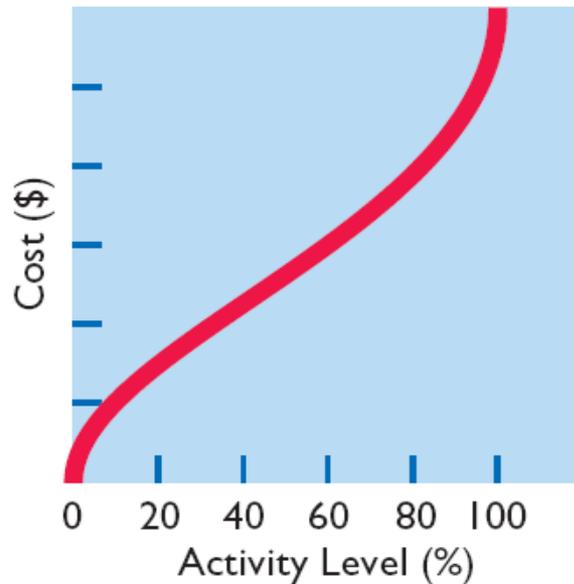
- a. Vary in total directly and proportionately with changes in the activity level.
- b. Remain the same per unit at every activity level.
- c. Neither of the above.
- d. Both (a) and (b) above.

Relevant Range

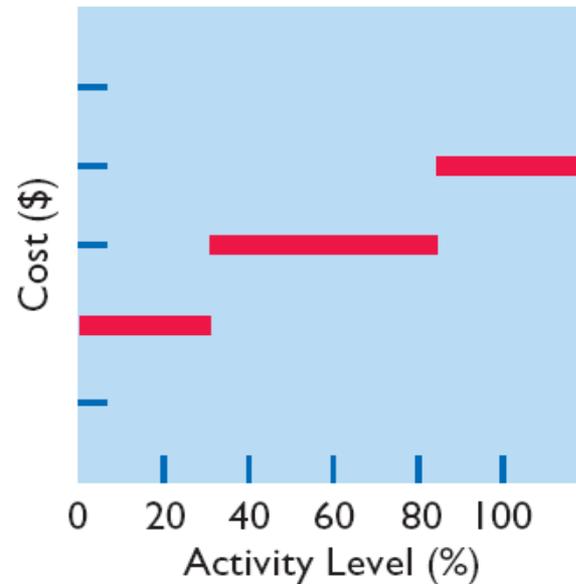
- Throughout the range of possible levels of activity, a *straight-line relationship usually does not exist* for either variable costs or fixed costs
- The relationship between variable costs and changes in activity level is often **curvilinear**
- For fixed costs, the relationship is also **nonlinear** - some fixed costs will not change over the entire range of activities while other fixed costs may change

Relevant Range - Graphs

(a)
Total Variable Costs
Curvilinear

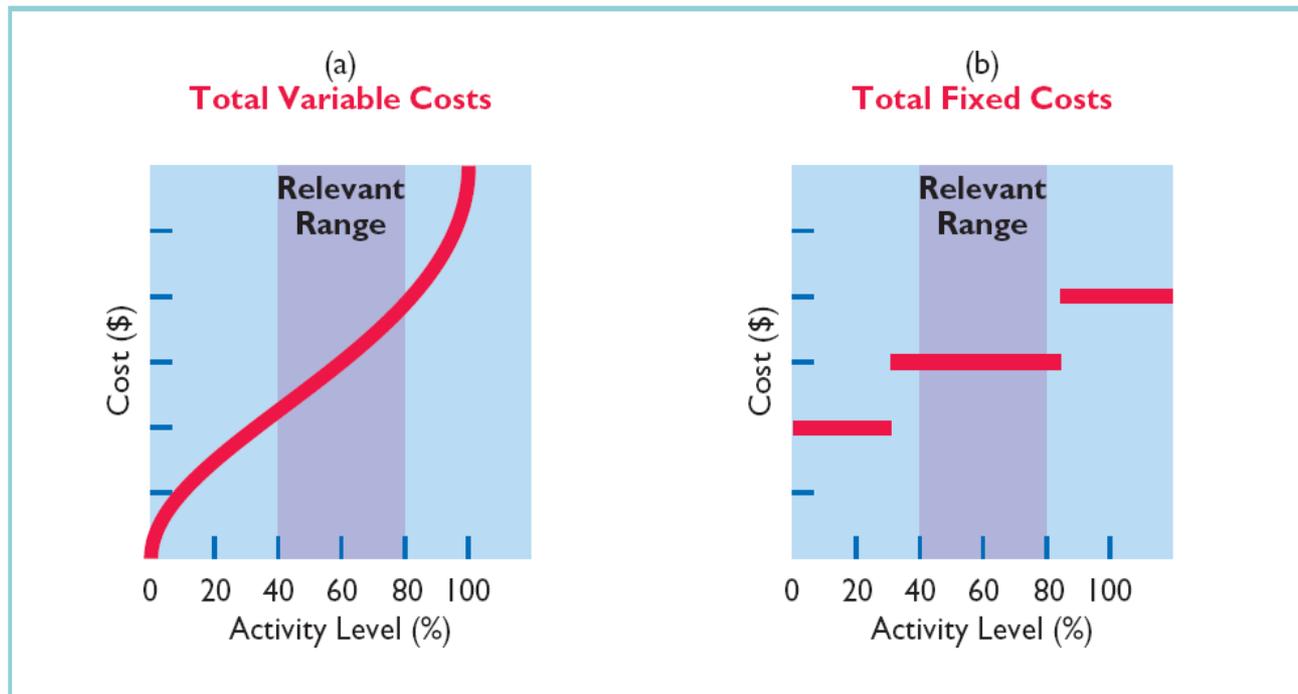


(b)
Total Fixed Costs
Nonlinear



Relevant Range

- Defined as the range of activity over which a company **expects to operate during a year**
- Within this range, a straight-line relationship usually exists for both variable and fixed costs



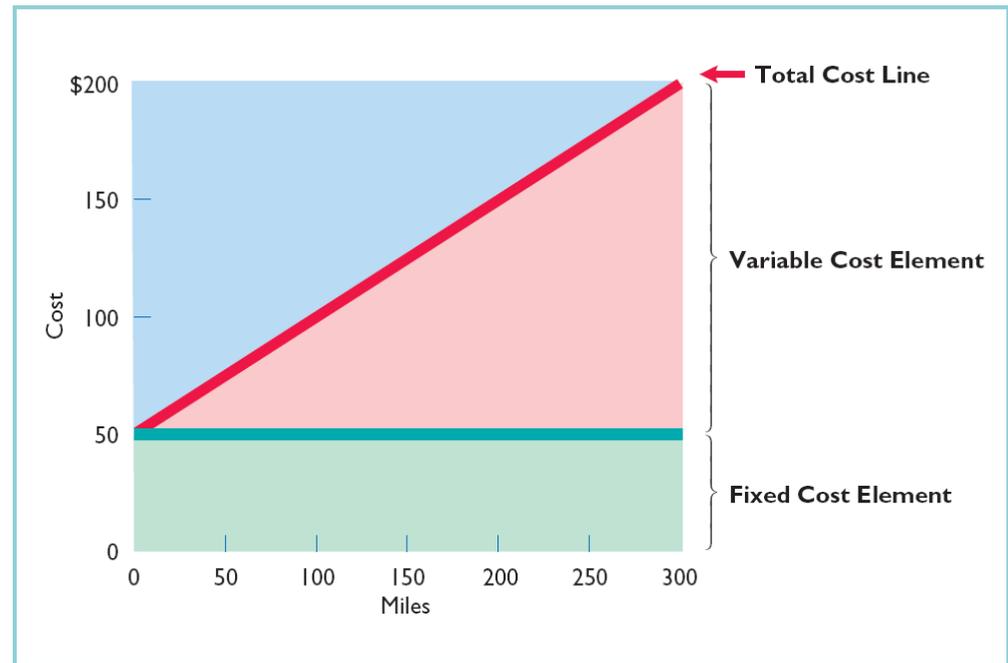
Let's Review

The relevant range is:

- a. The range of activity in which variable costs will be curvilinear.
- b. The range of activity in which fixed costs will be curvilinear.
- c. The range over which the company expects to operate during a year.
- d. Usually from zero to 100% of operating capacity.

Mixed Costs

- Costs that have **both** a variable cost element **and** a fixed cost element
- Sometimes called **semivariable cost**
- **Change in total but not proportionately with changes in activity level**



Mixed Costs: High-Low Method

- Mixed costs must be classified into their **fixed** and **variable** elements
- One approach to separate the costs is called the *high-low method*
- Uses the total costs incurred at both the high and the low levels of activity to classify mixed costs
- *The difference in costs between the high and low levels represents variable costs, since only variable costs change as activity levels change*

Mixed Costs: Steps in High-Low-Method

- **STEP 1:** Determine *variable cost per unit* using the following formula:

$$\frac{\text{Change in Total Costs}}{\text{High minus Low Activity Level}} = \text{Variable Cost per Unit}$$

- **STEP 2:** Determine the *fixed cost* by subtracting the total variable cost at *either* the high or the low activity level from the total cost at that level

Mixed Costs: High-Low-Method Example

Data for Metro Transit Company for 4 month period:

Month	Miles Driven	Total Cost	Month	Miles Driven	Total Cost
January	20,000	\$30,000	March	35,000	\$49,000
February	40,000	48,000	April	50,000	63,000

<i>High Level of Activity:</i>	April	\$63,000	50,000 miles
<i>Low Level of Activity:</i>	January	<u>30,000</u>	<u>20,000 miles</u>
	Difference	\$33,000	30,000 miles

Step 1: Using the formula, variable costs per unit are
 $\$33,000 \div 30,000 = \mathbf{\$1.10 \text{ variable cost per mile}}$

Mixed Costs: High-Low-Method Example

Step 2: Determine the fixed costs by subtracting total variable costs at *either* the high or low activity level from the total cost at that same level

	A	B	C	D
1	METRO TRANSIT			
2			Activity Level	
3			High	Low
4	Total cost		\$63,000	\$30,000
5	Less:	Variable costs		
6		50,000 X \$1.10	55,000	
7		20,000 X \$1.10		22,000
8	Total fixed costs		\$8,000	\$8,000

Mixed Costs: High-Low-Method Example

- Maintenance costs:
\$8,000 per month plus \$1.10 per mile
- To determine maintenance costs at a particular activity level:
 1. *multiply the activity level times the variable cost per unit*
 2. *then add that total to the fixed cost*

EXAMPLE: If the activity level is 45,000 miles, the estimated maintenance costs would be \$8,000 fixed and \$49,500 variable ($\$1.10 \times 45,000$ miles) for a total of \$57,500.

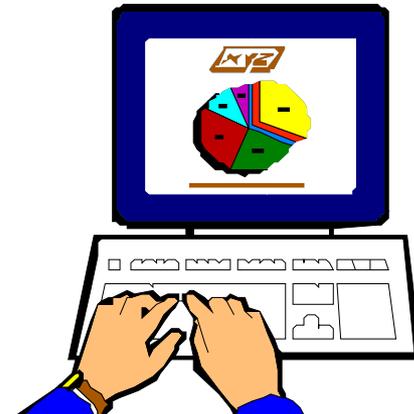
Let's Review

Mixed costs consist of a:

- a. Variable cost element and a fixed cost element.
- b. Fixed cost element and a controllable cost element.
- c. Relevant cost element and a controllable cost element.
- d. Variable cost element and a relevant cost element.

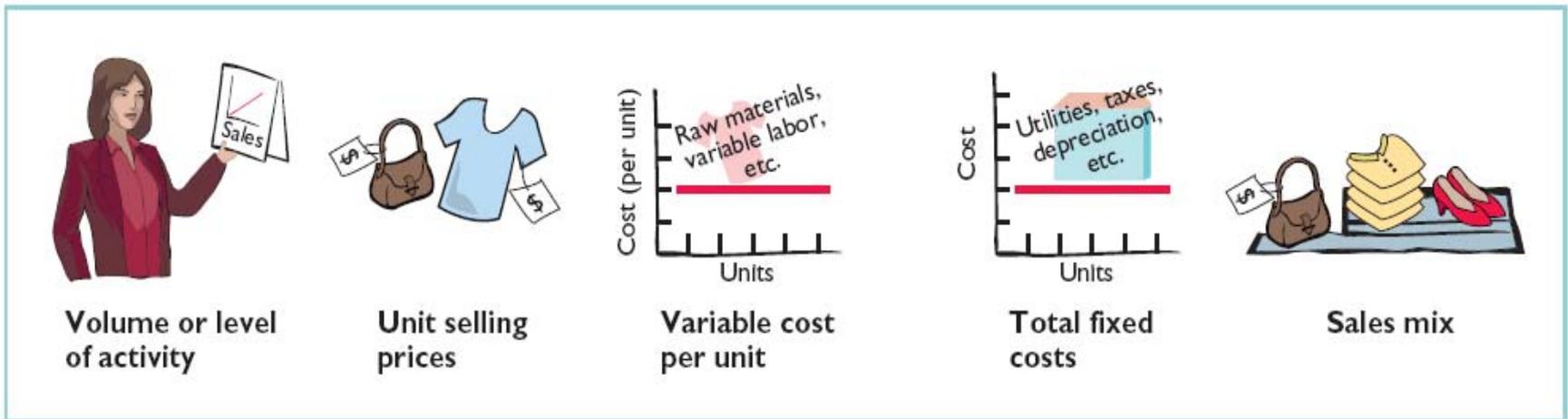
Cost-Volume-Profit Analysis

- Study of the *effects of changes of costs and volume* on a company's profits
- A critical factor in management decisions
- Important in profit planning



Cost-Volume-Profit Analysis

- CVP analysis considers the interrelationships among five basic components



Assumptions Underlying CVP Analysis

- Behavior of both costs and revenues is **linear** throughout the **relevant range** of the activity index
- All costs can be classified as either **variable or fixed** with reasonable accuracy
- Changes in **activity** are the only factors that affect costs
- All units **produced are sold**
- When more than one type of product is sold, the **sales mix will remain constant**

Let's Review

Which of the following is **NOT** involved in CVP analysis?

- a. Sales mix.
- b. Unit selling prices.
- c. Fixed costs per unit.
- d. Volume or level of activity.

CVP Income Statement

- A statement for *internal use*
- Classifies costs and expenses as fixed or variable
- Reports *contribution margin* in the body of the statement.

Contribution margin -
amount of revenue
remaining after
deducting variable costs

- Reports the *same net income* as a traditional income statement



CVP Income Statement - Example

- Vargo Video Company produces DVD players.
- Relevant data for June 2008:

<i>Unit selling price of DVD player</i>	<i>\$500</i>
<i>Unit variable costs</i>	<i>\$300</i>
<i>Total monthly fixed costs</i>	<i>\$200,000</i>
<i>Units sold</i>	<i>1,600</i>

VARGO VIDEO COMPANY CVP Income Statement For the Month Ended June 30, 2008

	Total	Per Unit
Sales (1,600 DVD players)	\$800,000	\$ 500
Variable costs	480,000	300
Contribution margin	320,000	\$200
Fixed costs	200,000	
Net income	\$120,000	

Contribution Margin Per Unit

- Contribution margin is available *to cover fixed costs and to contribute to income*
- The formula for *contribution margin per unit* and the computation for Vargo Video are:

Unit Selling Price	–	Unit Variable Costs	=	Contribution Margin per Unit
\$500	–	\$300	=	\$200

CVP Income Statement-CM effect

VARGO VIDEO COMPANY		
CVP Income Statement		
For the Month Ended June 30, 2008		
	<u>Total</u>	<u>Per Unit</u>
Sales (1,000 DVD players)	\$500,000	\$500
Variable costs	300,000	300
Contribution margin	200,000	\$200
Fixed costs	200,000	=
Net income	\$ -0-	=

VARGO VIDEO COMPANY		
CVP Income Statement		
For the Month Ended June 30, 2008		
	<u>Total</u>	<u>Per Unit</u>
Sales (1,001 DVD players)	\$500,500	\$500
Variable costs	300,300	300
Contribution margin	200,200	\$200
Fixed costs	200,000	=
Net income	\$ 200	=

Contribution Margin Ratio

- Shows the percentage of each sales dollar available to apply toward fixed costs and profits
- The formula for *contribution margin ratio* and the computation for Vargo Video are:

Contribution Margin per Unit	÷	Unit Selling Price	=	Contribution Margin Ratio
\$200	÷	\$500	=	40%

Contribution Margin Ratio

- Ratio helps to determine the effect of changes in sales on net income

VARGO VIDEO COMPANY

CVP Income Statements
For the Month Ended June 30, 2008

	No Change		With Change	
	Total	Per Unit	Total	Per Unit
Sales	\$500,000	\$ 500	\$600,000	\$ 500
Variable costs	300,000	300	360,000	300
Contribution margin	200,000	\$200	240,000	\$200
Fixed costs	200,000		200,000	
Net income	\$ -0-		\$ 40,000	

Let's Review

Contribution margin:

- a. Is revenue remaining after deducting variable costs.
- b. May be expressed as contribution margin per unit.
- c. Is selling price less cost of goods sold.
- d. Both (a) and (b) above.

Break-Even Analysis

- Process of finding the *break-even point*
level of activity at which *total revenues equal total costs* (both fixed and variable)
- Can be computed or derived from a *mathematical equation*, by using *contribution margin*, or from a cost-volume profit (*CVP*) graph
- Expressed either in *sales units* or in *sales dollars*

Break-Even Analysis: Mathematical Equation

- *Break-even occurs where total sales equal variable costs plus fixed costs; i.e., net income is zero.*
- The formula for the *break-even point* and the computation for Vargo Video are:

$$\begin{array}{rcccccc} \text{Sales} & = & \text{Variable} & + & \text{Fixed} & + & \text{Net} \\ & & \text{Costs} & & \text{Costs} & & \text{Income} \\ \$500Q & = & \$300Q & + & \$200,000 & + & \$0 \end{array}$$

$$\begin{array}{l} \$200Q = \$200,000 \\ Q = \mathbf{1,000 \text{ units}} \end{array}$$

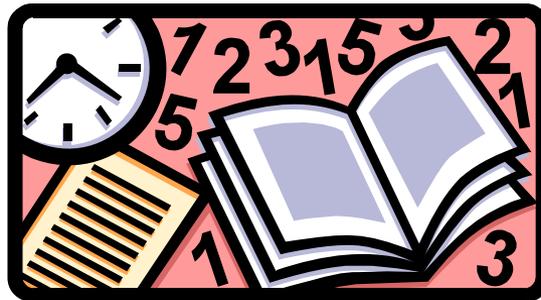
where

$$\begin{array}{l} Q = \text{sales volume in units} \\ \$500 = \text{selling price} \\ \$300 = \text{variable cost per unit} \\ \$200,000 = \text{total fixed costs} \end{array}$$

- To find *sales dollars* required to break-even:
 $1000 \text{ units} \times \$500 = \$500,000$ (break-even dollars)

Break-Even Analysis: Contribution Margin Technique

- At the break-even point, **contribution margin must equal total fixed costs**
($CM = \text{total revenues} - \text{variable costs}$)
- The break-even point can be computed using *either* contribution margin per unit or contribution margin ratio.



Contribution Margin Technique

- When the BEP *in units* is desired, contribution margin *per unit* is used in the following formula which shows the computation for Vargo Video:

$$\begin{array}{rclcl} \text{Fixed Costs} & \div & \text{Contribution Margin per Unit} & = & \text{Break-even Point in Units} \\ \$200,000 & \div & \$200 & = & \mathbf{1,000 \text{ units}} \end{array}$$

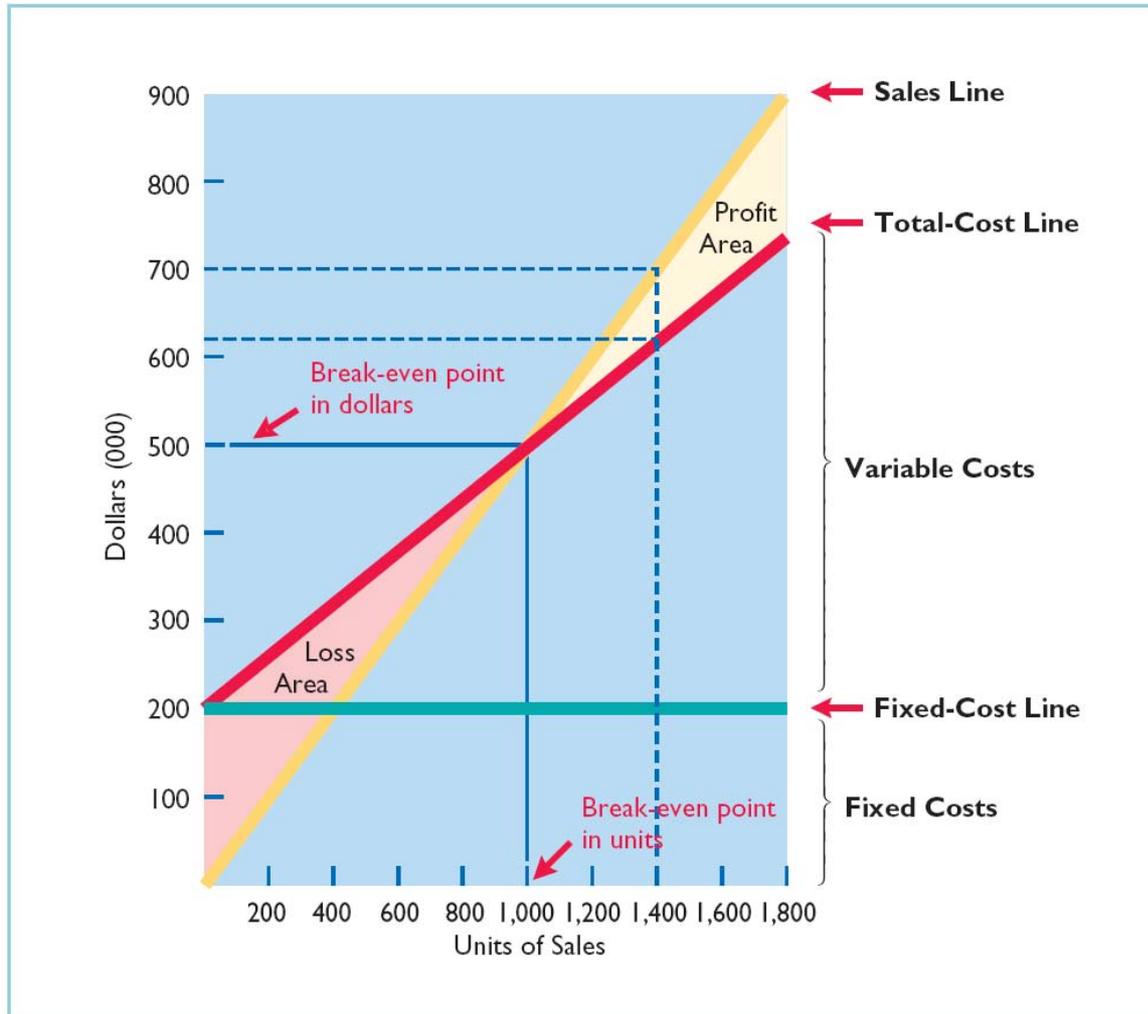
- When the BEP *in dollars* is desired, contribution margin *ratio* is used in the following formula which shows the computation for Vargo Video:

$$\begin{array}{rclcl} \text{Fixed Costs} & \div & \text{Contribution Margin Ratio} & = & \text{Break-even Point in Dollars} \\ \$200,000 & \div & 40\% & = & \mathbf{\$500,000} \end{array}$$

Break-Even Analysis: Graphic Presentation

- A cost-volume profit (CVP) graph shows costs, volume and profits.
- Used to visually find the break-even point
- To construct a CVP graph:
 - Plot the total sales line starting at the zero activity level*
 - Plot the total fixed cost using a horizontal line*
 - Plot the total cost line (starts at the fixed-cost line at zero activity)*
 - Determine the break-even point from the intersection of the total cost line and the total sales line*

Break-Even Analysis: Graphic Presentation



Let's Review

Gossen Company is planning to sell 200,000 pliers for \$4 per unit. The contribution margin ratio is 25%. If Gossen will break even at this level of sales, what are the fixed costs?

- a. \$100,000.
- b. \$160,000.
- c. \$200,000.
- d. \$300,000.

Break-Even Analysis: Target Net Income

- *Level of sales necessary to achieve a specified income*
- Can be determined from each of the approaches used to determine break-even sales/units:
 - from a *mathematical equation*,
 - by using *contribution margin*, or
 - from a cost-volume profit (*CVP*) *graph*
- Expressed either in *sales units* or in *sales dollars*

Break-Even Analysis: Target Net Income

Mathematical Equation

- Using the formula for the break-even point, *simply include the desired net income as a factor*. The computation for Vargo Video is as follows:

$$\begin{array}{rcccccc} \text{Required} & = & \text{Variable} & + & \text{Fixed} & + & \text{Target Net} \\ \text{Sales} & & \text{Costs} & & \text{Costs} & & \text{Income} \\ \$500Q & = & \$300Q & + & \$200,000 & + & \$120,000 \end{array}$$

$$\$200Q = \$320,000$$

$$Q = \mathbf{1,600}$$

where

Q = sales volume

\$500 = selling price

\$300 = variable costs per unit

\$200,000 = total fixed costs

\$120,000 = target net income

Break-Even Analysis: Target Net Income

Contribution Margin Technique

- To determine the required sales *in units* for Vargo Video:

Fixed Costs + Target Net Income	÷	Contribution Margin Per Unit	=	Required Sales in Units
(\$200,000 + \$120,000)	÷	\$200	=	1,600 units

- To determine the required sales *in dollars* for Vargo Video:

Fixed Costs + Target Net Income	÷	Contribution Margin Ratio	=	Required Sales in Dollars
(\$200,000 + \$120,000)	÷	40%	=	\$800,000

Let's Review

The mathematical equation for computing required sales to obtain target net income is:

Required sales =

- a. Variable costs + Target net income.
- b.** Variable costs + Fixed costs + Target net income.
- c. Fixed costs + Target net income.
- d. No correct answer is given.

Break-Even Analysis: Margin of Safety

- Difference between *actual or expected sales* and sales at the *break-even point*
- Measures the “cushion” that management has if expected sales fail to materialize
- May be expressed *in dollars or as a ratio*
- To determine the *margin of safety in dollars* for Vargo Video assuming that actual/expected sales are \$750,000:

Actual (Expected) Sales	–	Break-even Sales	=	Margin of Safety in Dollars
\$750,000	–	\$500,000	=	\$250,000

Break-Even Analysis: Margin of Safety

Margin of Safety Ratio

- Computed by dividing the margin of safety in dollars by the actual or expected sales
- To determine the *margin of safety ratio* for Vargo Video assuming that actual/expected sales are \$750,000:

Margin of Safety in Dollars	÷	Actual (Expected) Sales	=	Margin of Safety Ratio
\$250,000	÷	\$750,000	=	33%

- The higher the dollars or the percentage, the greater the margin of safety

CVP Income Statement Revisited

VARGO VIDEO COMPANY CVP Income Statement For the Month Ended June 30, 2008

	<u>Total</u>	<u>Per Unit</u>
Sales	\$800,000	\$500
Variable expenses		
Cost of goods sold	\$400,000	
Selling expenses	60,000	
Administrative expenses	20,000	
Total variable expenses	<u>480,000</u>	<u>300</u>
Contribution margin	320,000	\$200
Fixed expenses		
Cost of goods sold	120,000	
Selling expenses	40,000	
Administrative expenses	40,000	
Total fixed expenses	<u>200,000</u>	
Net income	<u>120,000</u>	

Let's Review

Marshall Company had actual sales of \$600,000 when break-even sales were \$420,000. What is the margin of safety ratio?

- a. 25%.
- b. 30%.
- c. 33 1/3%.
- d. 45%.

Chapter Review - Brief Exercise 22-4

Deines Company accumulates the following data concerning a mixed cost, using miles as the activity level.

	<u>Miles</u> <u>Driven</u>	<u>Total</u> <u>Cost</u>		<u>Miles</u> <u>Driven</u>	<u>Total</u> <u>Cost</u>
January	8,000	\$14,150	March	8,500	\$15,000
February	7,500	\$13,600	April	8,200	\$14,490

Compute the variable and fixed cost elements using the high-low method.

Chapter Review - Brief Exercise 22-4

<i>High Level of Activity:</i>	March	\$15,000	8,500 miles
<i>Low Level of Activity:</i>	February	<u>13,600</u>	<u>7,500 miles</u>
	Difference	\$ 1,400	1,000 miles

Step 1:

$$\begin{aligned} \text{Variable Cost per Unit} &= \$1,400 \div 1,000 \text{ miles} \\ &= \text{\$1.40 variable cost per mile} \end{aligned}$$

Step 2:

	High	Low
Total Cost:	\$15,000	\$13,600
Variable Cost:		
8,500 X \$1.40	<u>11,900</u>	
7,500 X \$1.40		<u>10,500</u>
Total Fixed Costs	\$ 3,100	\$ 3,100

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Dan R. Ward
Suzanne P. Ward

University of Louisiana at Lafayette

CHAPTER 23

BUDGETARY PLANNING

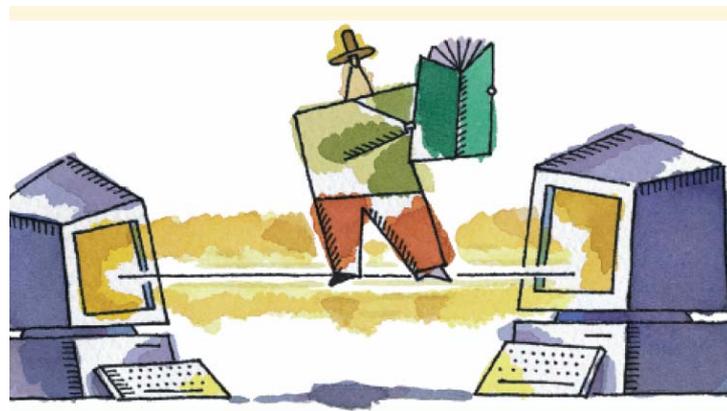
Accounting Principles, Eighth Edition

Study Objectives

1. Indicate the benefits of budgeting.
2. State the essentials of effective budgeting.
3. Identify the budgets that comprise the master budget.
4. Describe the sources for preparing the budgeted income statement.
5. Explain the principal sections of a cash budget.
6. Indicate the applicability of budgeting in nonmanufacturing companies.

Preview of Chapter

- Budgeting is critical to financial well-being
- Use budgets in planning and controlling operations
- Specific focus is on how budgeting is used as a *planning tool* by management.



Budgetary Planning

Budgeting Basics

- Budgeting & accounting
- Benefits
- Essentials of effective budgeting
- Length of budget period
- Budgeting process
- Budgeting and human behavior
- Budgeting and long-range planning
- The master budget

Preparing the Operating Budgets

- Sales
- Production
- Direct materials
- Direct labor
- Manufacturing overhead
- Selling and administrative expense
- Budgeted income statement

Preparing the Financial Budgets

- Cash
- Budgeted balance sheet

Budgeting in Non-manufacturing Companies

- Merchandisers
- Service
- Not-for-profit

Budgeting Basics

Budget

- A formal written statement of management's plans for a specified future time period, expressed in financial terms
- Primary way to communicate agreed-upon objectives to all parts of the company
- Promotes efficiency
- *Control device* - important basis for performance evaluation once adopted

Budgeting Basics - Role of Accounting

- Historical accounting data on revenues, costs, and expenses help in formulating future budgets
- Accountants normally responsible for presenting *management's* budgeting goals in *financial terms*
- The budget and its administration are, however, *entirely management's responsibility*



Budgeting Basics - Benefits

- Requires all levels of management to *plan ahead* and formalize goals on a recurring basis
- Provides *definite objectives* for evaluating performance at each level of responsibility
- Creates an *early warning system* for potential problems



Budgeting Basics - Benefits

- Facilitates *coordination of activities* within the business
- Results in *greater management awareness* of the entity's overall operations and the impact of external factors
- *Motivates personnel* throughout organization to meet planned objectives

Budgeting Basics - Benefits

A budget is
an **aid** to management
not a substitute for management.

Let's Review

Which of the following is **not** a benefit of budgeting?

- a. Management can plan ahead.
- b. An early warning system is provided for potential problems.
- c. It enables disciplinary action to be taken at every level of responsibility.
- d. The coordination of activities is facilitated.

Effective Budgeting

- Depends on a *sound organizational structure* with authority and responsibility for all phases of operations clearly defined
- Based on *research and analysis* with realistic goals
- *Accepted by all levels of management*



The Budget Period

- May be prepared for **any period of time**
 - Most common - **one year**
 - Supplement with monthly and quarterly budgets
 - Different budgets may **cover different time periods**
- **Long enough** to provide an attainable goal and minimize seasonal or cyclical fluctuations
- **Short enough** for reliable estimates
- **Continuous twelve-month budget**
 - Drop the month just ended and add a future month
 - Keeps management planning a full year ahead

The Budgeting Process

- Base budget goals on past performance

Collect data from organizational units

Begin several months before end of current year



- Develop budget within the framework of a *sales forecast*

Shows potential industry sales

Shows company's expected share



The Budgeting Process

Factors considered in Sales Forecasting:

- ① General economic conditions
- ② Industry trends
- ③ Market research studies
- ④ Anticipated advertising and promotion
- ⑤ Previous market share
- ⑥ Price changes
- ⑦ Technological developments

Budgeting and Human Behavior

Participative Budgeting

- May inspire higher levels of performance or discourage additional effort
- Depends on how budget developed and administered
- Invite each level of management to participate

*This "bottom-to-top" approach is called
Participative Budgeting*

Participative Budgeting

- **Advantages:**

More accurate budget estimates because lower level managers have more detailed knowledge of their area

Tendency to perceive process as fair due to involvement of lower level management

- **Overall goal** - produce a budget considered fair and achievable by managers while still meeting corporate goals

- Risk of unreliable budgets greater when they are **"top-down"**

Participative Budgeting

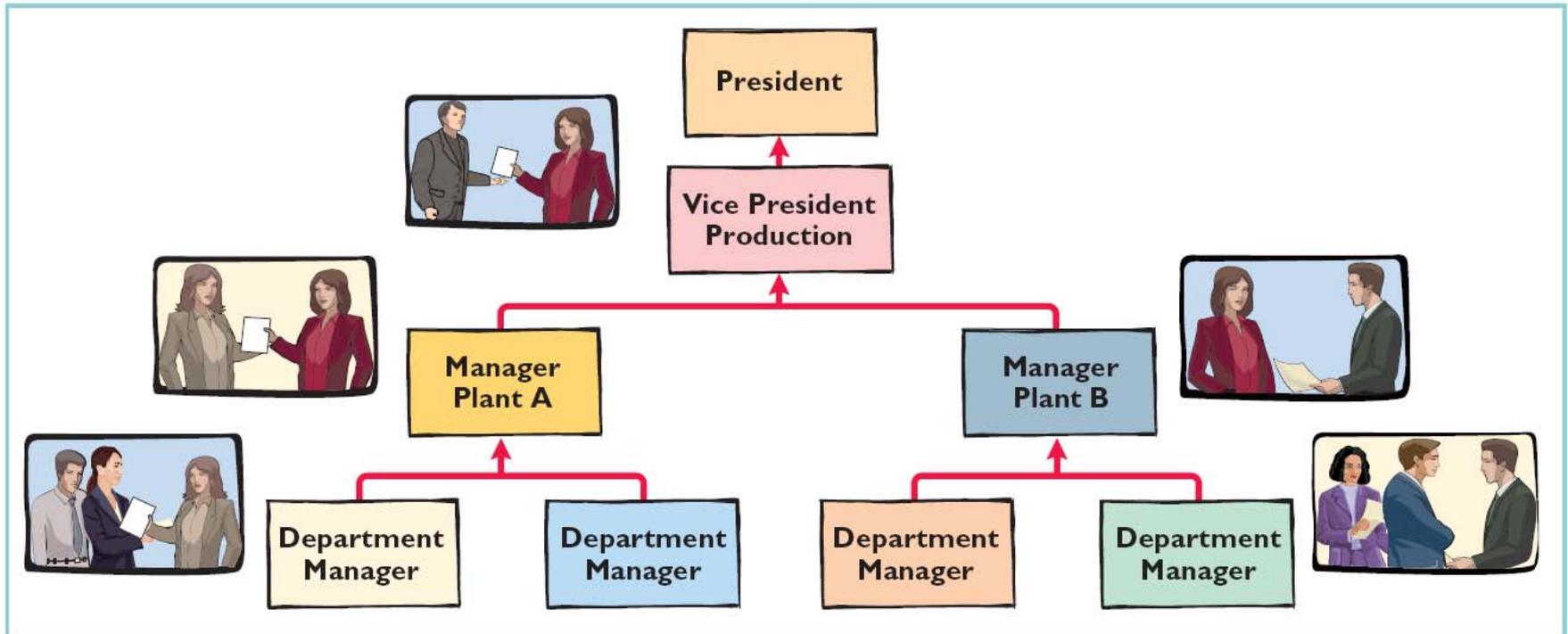
Disadvantages:

- Can be *time consuming* and *costly*
- Can foster budgetary "gaming" through *budgetary slack:*



situation where managers *intentionally* underestimate budgeted revenues or overestimate budgeted expenses so that budget goals are easier to meet

Participative Budgeting



Flow of budget data from lower management to top levels

Budgeting Versus Long Range Planning

Three basic differences between Budgeting and Long Range Planning:

Time period involved

Emphasis

Detail presented

Time period:

Budgeting is short-term - usually one year

Long range planning - at least five years

Let's Review

The essentials of effective budgeting do not include:

- a. Top-down budgeting.
- b. Management acceptance.
- c. Research and analysis.
- d. Sound organizational structure.

The Master Budget

- A set of interrelated budgets that constitutes a plan of action for a specified time period
- Contains two classes of budgets:

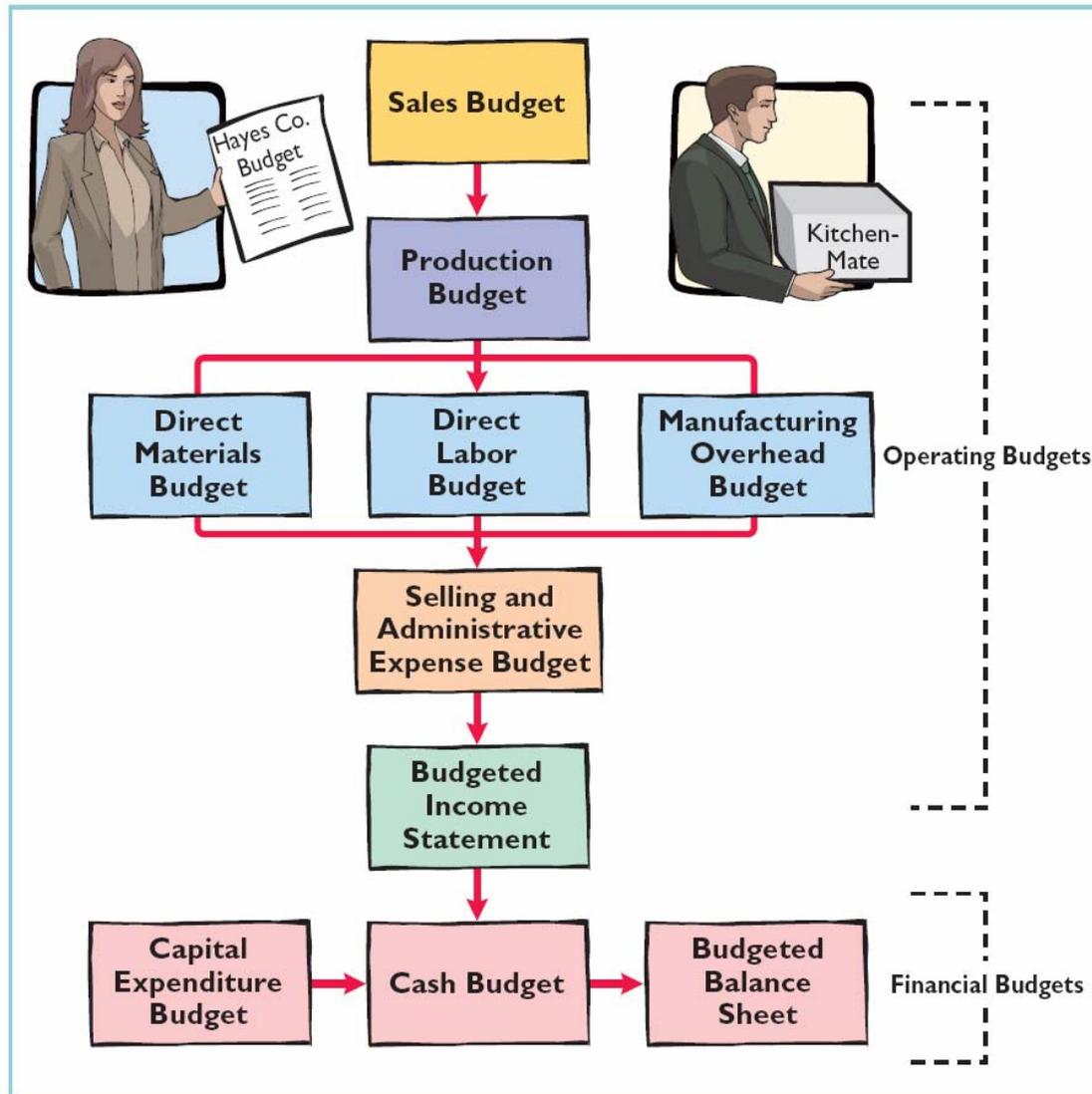
Operating budgets:

Individual budgets that result in the preparation of the budgeted income statement - establish goals for sales and production personnel

Financial budgets:

The capital expenditures budget, the cash budget, and the budgeted balance sheet - focus primarily on cash needs to fund operations and capital expenditures

The Master Budget - Components



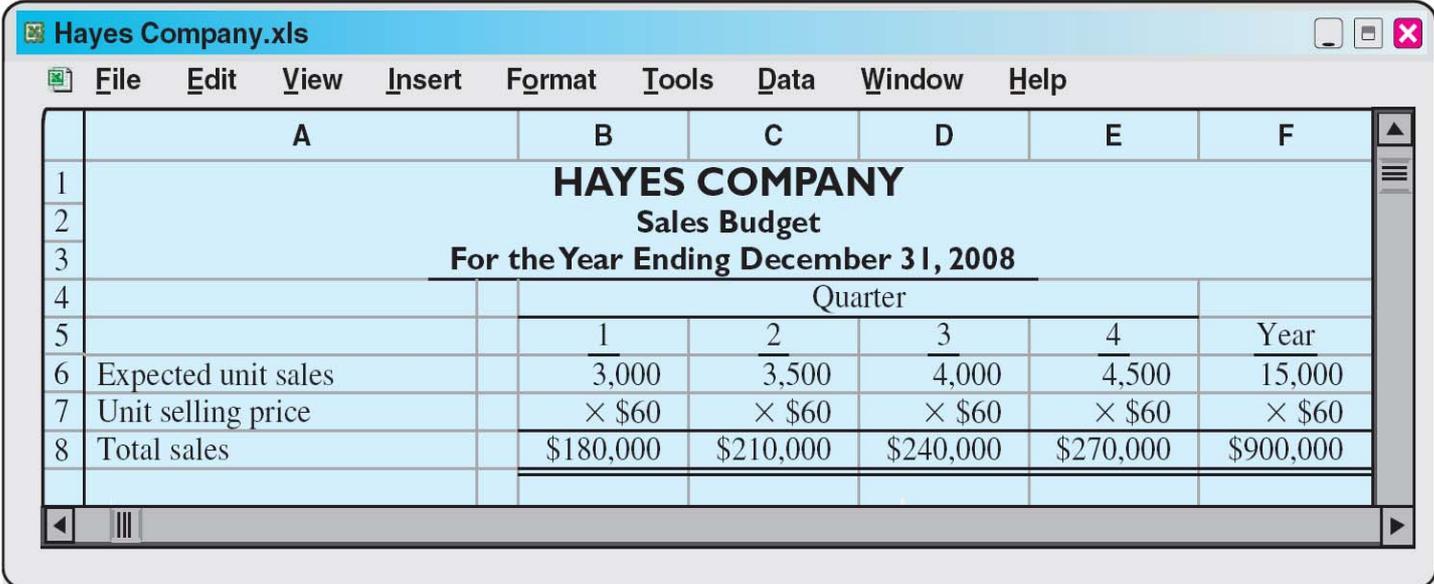
Operating Budgets: Sales Budget

- First budget prepared
- Derived from the sales forecast
 - Management's *best estimate* of sales revenue for the budget period
 - Every other budget depends on the sales budget
- Prepared by multiplying
 - expected unit sales volume for each product*
 - times*
 - anticipated unit selling price*

Operating Budgets: Sales Budget

Example - Hayes Company

- Expected sales volume: 3,000 units in the first quarter with 500-unit increments for each following quarter
- Sales price: \$60 per unit



	A	B	C	D	E	F
1	HAYES COMPANY					
2	Sales Budget					
3	For the Year Ending December 31, 2008					
4		Quarter				
5		1	2	3	4	Year
6	Expected unit sales	3,000	3,500	4,000	4,500	15,000
7	Unit selling price	× \$60	× \$60	× \$60	× \$60	× \$60
8	Total sales	\$180,000	\$210,000	\$240,000	\$270,000	\$900,000

Operating Budgets: Production Budget

- Shows the *units that must be produced* to meet anticipated sales
- Derived from sales budget plus the desired change in ending finished goods (ending finished goods less the beginning finished goods units)
- Required production in units formula:

$$\begin{array}{rcccl} \text{Budgeted} & & \text{Desired Ending} & & \text{Beginning} & & \text{Required} \\ \text{Sales Units} & + & \text{Finished} & - & \text{Finished} & = & \text{Production} \\ & & \text{Goods Units} & & \text{Goods Units} & & \text{Units} \end{array}$$

- Essential to have a realistic estimate of ending inventory

Operating Budgets: Production Budget

Example - Hayes Company

Hayes Co. believes it can meet future sales needs with an ending inventory of 20% of next quarter's sales

HAYES COMPANY										
Production Budget										
For the Year Ending December 31, 2008										
	Quarter									
	1	2	3	4	Year					
Expected unit sales (Illustration 23-3)	3,000	3,500	4,000	4,500						
Add: Desired ending finished goods units ^a	700	800	900	1,000	^b					
Total required units	3,700	4,300	4,900	5,500						
Less: Beginning finished goods units	600 ^c	700	800	900						
Required production units	3,100	3,600	4,100	4,600	15,400					
^a 20% of next quarter's sales										
^b Expected 2009 first-quarter sales, 5,000 units × 20%										
^c 20% of estimated first-quarter 2008 sales units										

Operating Budgets: Direct Materials Budget

- Shows both the **quantity** and **cost** of direct materials to be purchased
- Derived from the direct materials units required for production (from the production budget) plus the desired change in ending direct materials units

$$\begin{array}{r} \text{Direct} \\ \text{Materials Units} \\ \text{Required for} \\ \text{Production} \end{array} + \begin{array}{r} \text{Desired Ending} \\ \text{Direct} \\ \text{Materials Units} \end{array} - \begin{array}{r} \text{Beginning} \\ \text{Direct} \\ \text{Materials Units} \end{array} = \begin{array}{r} \text{Required} \\ \text{Direct Materials} \\ \text{Units to} \\ \text{be Purchased} \end{array}$$

- ***Budgeted cost of direct materials to be purchased = required units of direct materials X anticipated cost per unit***

Operating Budgets: Direct Materials Budget

Example - Hayes Company

- Key component in budgeting process - desired ending inventory
- An ending inventory of 10% of next quarter's production requirements is sufficient
- The manufacturing of each unit requires 2 pounds of raw materials at an expected price of \$4 per pound



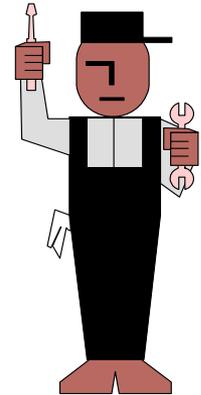
Operating Budgets: Direct Materials Budget

Example - Hayes Company

Hayes Company Direct Materials Budget.xls											
File Edit View Insert Format Tools Data Window Help											
	A	B	C	D	E	F	G	H	I	J	K
1	HAYES COMPANY										
2	Direct Materials Budget										
3	For the Year Ending December 31, 2008										
4		Quarter									
5		1	2	3	4	Year					
6	Units to be produced (Illustration 23-5)	3,100	3,600	4,100	4,600						
7	Direct materials per unit	× 2	× 2	× 2	× 2						
8	Total pounds needed for production	6,200	7,200	8,200	9,200						
9	Add: Desired ending direct materials (pounds) ^a	720	820	920	1,020						
10	Total materials required	6,920	8,020	9,120	10,220						
11	Less: Beginning direct materials (pounds)	620 ^b	720	820	920						
12	Direct materials purchases	6,300	7,300	8,300	9,300						
13	Cost per pound	× \$4	× \$4	× \$4	× \$4						
14	Total cost of direct materials purchases	\$25,200	\$29,200	\$33,200	\$37,200	\$124,800					
15											
16	^a 10% of next quarter's production requirements										
17	^b 10% of estimated first-quarter pounds needed for production										
18											

Operating Budgets: Direct Labor Budget

- Shows both the *quantity of hours and cost of direct labor* necessary to meet production requirements
- Critical in maintaining a labor force that can *meet expected production*
- Total direct labor cost formula:



$$\begin{array}{ccccccc} \text{Units to} & & \text{Direct Labor} & & \text{Direct Labor} & & \\ \text{be} & \times & \text{Time} & \times & \text{Cost} & = & \\ \text{Produced} & & \text{per Unit} & & \text{per Hour} & & \text{Total Direct} \\ & & & & & & \text{Labor Cost} \end{array}$$

Operating Budgets: Direct Labor Budget

Example - Hayes Company

- Direct labor hours from the production budget
- Two hours of direct labor required for each unit
- Anticipated hourly wage rate \$10

HAYES COMPANY						
Direct Labor Budget						
For the Year Ending December 31, 2008						
	Quarter					
	1	2	3	4	Year	
Units to be produced (Illustration 23-5)	3,100	3,600	4,100	4,600		
Direct labor time (hours) per unit	× 2	× 2	× 2	× 2		
Total required direct labor hours	6,200	7,200	8,200	9,200		
Direct labor cost per hour	× \$10	× \$10	× \$10	× \$10		
Total direct labor cost	\$62,000	\$72,000	\$82,000	\$92,000	\$308,000	

Operating Budgets: Manufacturing Overhead

- Shows the expected manufacturing overhead costs for the budget period
- Distinguishes between *fixed* and *variable* overhead costs

Example - Hayes Company

Fixed cost amounts are assumed

Expected variable costs per direct labor hour:

indirect materials:	\$1.00
indirect labor:	\$1.40
utilities:	\$0.40
maintenance:	\$0.20

LO 3: Identify the budgets that comprise the master budget.

Operating Budgets: Manufacturing Overhead

Hayes Company Manufacturing Overhead Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F
1	HAYES COMPANY					
2	Manufacturing Overhead Budget					
3	For the Year Ending December 31, 2008					
4		Quarter				
5		1	2	3	4	Year
6	Variable costs					
7	Indirect materials (\$1.00/hour)	\$ 6,200	\$ 7,200	\$ 8,200	\$ 9,200	\$ 30,800
8	Indirect labor (\$1.40/hour)	8,680	10,080	11,480	12,880	43,120
9	Utilities (\$0.40/hour)	2,480	2,880	3,280	3,680	12,320
10	Maintenance (\$0.20/hour)	1,240	1,440	1,640	1,840	6,160
11	Total variable costs	18,600	21,600	24,600	27,600	92,400
12	Fixed costs					
13	Supervisory salaries	20,000	20,000	20,000	20,000	80,000
14	Depreciation	3,800	3,800	3,800	3,800	15,200
15	Property taxes and insurance	9,000	9,000	9,000	9,000	36,000
16	Maintenance	5,700	5,700	5,700	5,700	22,800
17	Total fixed costs	38,500	38,500	38,500	38,500	154,000
18	Total manufacturing overhead	\$57,100	\$60,100	\$63,100	\$66,100	\$246,400
	Direct labor hours					
19	(Illustration 23-9)	6,200	7,200	8,200	9,200	30,800
20	Manufacturing overhead rate per direct labor hour (\$246,400 ÷ 30,800)					\$ 8
21						

Operating Budgets: Selling and Administrative

- Projection of anticipated operating expenses
- Distinguishes between *fixed* and *variable* costs

Example - Hayes Company

Fixed cost amounts are assumed

Expected variable costs per unit sold
(from sales budget):

sales commissions: \$3.00

freight-out: \$1.00

Operating Budgets: Selling and Administrative

Hayes Company Manufacturing Selling and Administrative Expense Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F
1	HAYES COMPANY					
2	Selling and Administrative Expense Budget					
3	For the Year Ending December 31, 2008					
4		Quarter				
5		1	2	3	4	Year
6	Budgeted sales in units (Illustration 23-3)	3,000	3,500	4,000	4,500	15,000
7	Variable expenses					
8	Sales commissions (\$3 per unit)	\$ 9,000	\$10,500	\$12,000	\$13,500	\$ 45,000
9	Freight-out (\$1 per unit)	3,000	3,500	4,000	4,500	15,000
10	Total variable expenses	12,000	14,000	16,000	18,000	60,000
11	Fixed expenses					
12	Advertising	5,000	5,000	5,000	5,000	20,000
13	Sales salaries	15,000	15,000	15,000	15,000	60,000
14	Office salaries	7,500	7,500	7,500	7,500	30,000
15	Depreciation	1,000	1,000	1,000	1,000	4,000
16	Property taxes and insurance	1,500	1,500	1,500	1,500	6,000
17	Total fixed expenses	30,000	30,000	30,000	30,000	120,000
18	Total selling and administrative expenses	\$42,000	\$44,000	\$46,000	\$48,000	\$180,000
19						

Let's Review

A sales budget is:

- a. Derived from the production budget.
- b.** Management's best estimate of sales revenue for the year.
- c. Not the starting point for the master budget.
- d. Prepared only for credit sales.

Operating Budgets: Budgeted Income Statement

- Important *end-product of the operating budgets*
- Indicates *expected profitability* of operations
- Provides a *basis for evaluating* company performance
- Prepared from the operating budgets
 - Sales Budget
 - Production Budget
 - Direct Materials Budget
 - Direct Labor Budget
 - Manufacturing Overhead Budget
 - Selling and Administrative Expense Budget

Operating Budgets: Budgeted Income Statement

Example - Hayes Company

- To find cost of goods sold:

First, determine the unit cost of one Kitchen-mate

Cost Element	Cost of One Kitchen-Mate			
	Illustration	Quantity	Unit Cost	Total
Direct materials	23-7	2 pounds	\$ 4.00	\$ 8.00
Direct labor	23-9	2 hours	\$10.00	20.00
Manufacturing overhead	23-10	2 hours	\$ 8.00	16.00
Total unit cost				\$44.00

Second, determine Cost of Goods Sold by multiplying units sold times unit cost:

$$15,000 \text{ units} \times \$44 = \$660,000$$

Operating Budgets: Budgeted Income Statement

HAYES COMPANY

Budgeted Income Statement
For the Year Ending December 31, 2008

Sales (Illustration 23-3)	\$900,000
Cost of goods sold (15,000 × \$44)	<u>660,000</u>
Gross profit	240,000
Selling and administrative expenses (Illustration 23-11)	<u>180,000</u>
Income from operations	60,000
Interest expense	<u>100</u>
Income before income taxes	59,900
Income tax expense	<u>12,000</u>
Net income	<u><u>\$ 47,900</u></u>

Additional estimated data for budgeted income statement:

Interest Expense - \$100 Income Taxes - \$12,000

Let's Review

Each of the following budgets is used in preparing the budgeted income statement **except** the:

- a. Sales budget.
- b. Selling and administrative budget.
- c. Capital expenditure budget.
- d. Direct labor budget.

Financial Budgets: Cash Budget

- Shows *anticipated* cash flows
- Often considered to be the *most important output in preparing financial budgets*
- Contains three sections:
 - ① Cash Receipts
 - ② Cash Disbursements
 - ③ Financing
- Shows beginning and ending cash balances



Operating Budgets: Budgeted Income Statement

Basic Format

ANY COMPANY Cash Budget

Beginning cash balance	\$X,XXX
Add: Cash receipts (Itemized)	<u>X,XXX</u>
Total available cash	X,XXX
Less: Cash disbursements (Itemized)	<u>X,XXX</u>
Excess (deficiency) of available cash over cash disbursements	X,XXX
Financing	<u>X,XXX</u>
Ending cash balance	<u><u>\$X,XXX</u></u>

Financial Budgets: Cash Budget

● Cash Receipts Section

- ◆ Includes expected receipts from the *principal sources* of revenue - usually cash sales and collections on credit sales
- ◆ Shows expected interest and dividends receipts as well as proceeds from planned sales of investments, plant assets, and capital stock

● Cash Disbursements Section

- ◆ Includes *expected cash payments* for direct materials and labor, taxes, dividends, plant assets, etc.

● Financing Section

- ◆ Shows *expected borrowings and repayments* of borrowed funds plus interest

Financial Budgets: Cash Budget

- Must prepare in sequence
- Ending cash balance of one period is the beginning cash balance for the next
- Data obtained from other budgets and from management
- Often prepared for the year on a monthly basis



Financial Budgets: Cash Budget

Example - Hayes Company Assumptions

January 1, 2008 cash balance: \$38,000

Sales: collect 60% in quarter sold; 40% in next quarter;
collect December 31, 2007 Accounts Receivable in Quarter 1

Expected sale of short term investments: \$2,000 in Quarter 1

Direct Materials: pay 50% in quarter purchased; 50% in next
pay December 31, 2007 Accounts Payable in Quarter 1

Direct Labor: pay 100% in quarter incurred

Manufacturing Overhead and Selling/Administrative Expenses:
pay (except depreciation) in quarter incurred

Expected purchase of truck: \$10,000 cash in Quarter 2

Estimated annual income taxes: Equal payment each quarter

Loans: Pay in earliest quarter with sufficient cash (i.e., cash on hand exceeds the \$15,000 minimum required balance)

Financial Budgets: Cash Budget

Example - Hayes Company

Usually prepare schedule of collections from customers

HAYES COMPANY

Schedule of Expected Collections from Customers

	Quarter			
	1	2	3	4
Accounts receivable, 12/31/07	\$ 60,000			
First quarter (\$180,000)	108,000	\$ 72,000		
Second quarter (\$210,000)		126,000	\$ 84,000	
Third quarter (\$240,000)			144,000	\$ 96,000
Fourth quarter (\$270,000)				162,000
Total collections	<u>\$168,000</u>	<u>\$198,000</u>	<u>\$228,000</u>	<u>\$258,000</u>

Financial Budgets: Cash Budget

Example - Hayes Company

- Prepare schedule of cash payments for direct materials

HAYES COMPANY

Schedule of Expected Payments for Direct Materials

	Quarter			
	1	2	3	4
Accounts payable, 12/31/07	\$10,600			
First quarter (\$25,200)	12,600	\$12,600		
Second quarter (\$29,200)		14,600	\$14,600	
Third quarter (\$33,200)			16,600	\$16,600
Fourth quarter (\$37,200)				18,600
Total payments	<u>\$23,200</u>	<u>\$27,200</u>	<u>\$31,200</u>	<u>\$35,200</u>

- Now prepare the Cash Budget based on the assumptions and preceding schedules

Financial Budgets: Cash Budget

Hayes Company Cash Budget.xls										
File Edit View Insert Format Tools Data Window Help										
	A	B	C	D	E	F	G	H	I	J
	HAYES COMPANY									
	Cash Budget									
	For the Year Ending December 31, 2008									
			Quarter							
		Assumption	1	2	3	4				
6	Beginning cash balance	1	\$ 38,000	\$ 25,500	\$ 15,000	\$ 19,400				
7	Add: Receipts									
8	Collections from customers	2	168,000	198,000	228,000	258,000				
9	Sale of securities	3	2,000	0	0	0				
10	Total receipts		170,000	198,000	228,000	258,000				
11	Total available cash		208,000	223,500	243,000	277,400				
12	Less: Disbursements									
13	Direct materials	4	23,200	27,200	31,200	35,200				
14	Direct labor	5	62,000	72,000	82,000	92,000				
15	Manufacturing overhead	6	53,300	^a 56,300	59,300	62,300				
16	Selling and administrative expenses	6	41,000	^b 43,000	45,000	47,000				
17	Purchase of truck	7	0	10,000	0	0				
18	Income tax expense	8	3,000	3,000	3,000	3,000				
19	Total disbursements		182,500	211,500	220,500	239,500				
20	Excess (deficiency) of available cash over cash disbursements		25,500	12,000	22,500	37,900				
21	Financing									
22	Borrowings		0	3,000	0	0				
23	Repayments-plus \$100 interest	9	0	0	3,100	0				
24	Ending cash balance		\$ 25,500	\$ 15,000	\$ 19,400	\$ 37,900				
26	^a \$57,100-\$3,800 depreciation									
27	^b \$42,000-\$1,000 depreciation									

Financial Budgets: Cash Budget

- Contributes to more effective cash management
- Shows managers the need for additional financing before actual need arises
- Indicates when excess cash will be available

\$ CASH \$

Financial Budgets: Budgeted Balance Sheet

- A projection of financial position at the *end of the budgeted period*
- Developed from the budgeted balance sheet for the preceding year and the budgets for the current year



Financial Budgets: Budgeted Balance Sheet

Example - Hayes Company

HAYES COMPANY			
Budgeted Balance Sheet			
December 31, 2008			
<u>Assets</u>			
Cash			\$ 37,900
Accounts receivable			108,000
Finished goods inventory			44,000
Raw materials inventory			4,080
Buildings and equipment	\$192,000		
Less: Accumulated depreciation	48,000		144,000
Total assets			<u>\$337,980</u>
<u>Liabilities and Stockholders' Equity</u>			
Accounts payable			\$ 18,600
Common stock			225,000
Retained earnings			94,380
Total liabilities and stockholders' equity			<u>\$337,980</u>

Additional data:

Buildings and equipment	\$182,000	Common stock	\$225,000
Accumulated depreciation	\$ 28,800	Retained earnings	\$ 46,480

Let's Review

Expected direct materials purchases in Read Company are \$70,000 in the first quarter and \$90,000 in the second quarter. Forty percent of the purchases are paid in cash as incurred, and the balance is paid in the following quarter. The budgeted cash payments for purchases in the second quarter are:

- a. \$96,000
- b. \$90,000
- c. \$78,000
- d. \$72,000

Budgeting: Merchandisers

- ***Sales Budget***: starting point and key factor in developing the master budget
- Use a ***purchases budget*** instead of a production budget
- Does ***not*** use the manufacturing budgets (direct materials, direct labor, manufacturing overhead)
- To determine budgeted merchandise purchases:

$$\begin{array}{rcccl} \text{Budgeted} & & \text{Desired Ending} & & \text{Beginning} & & \text{Required} \\ \text{Cost of} & + & \text{Merchandise} & - & \text{Merchandise} & = & \text{Merchandise} \\ \text{Goods Sold} & & \text{Inventory} & & \text{Inventory} & & \text{Purchases} \end{array}$$

Budgeting: Merchandisers

Example - Lima Company

Budgeted sales for July \$300,000 and for August \$320,000

Cost of Goods Sold: 70% of sales

Desired ending inventory: 30% of next month's Cost of Goods Sold

LIMA COMPANY Merchandise Purchases Budget For the Month Ending July 31, 2008

Budgeted cost of goods sold ($\$300,000 \times 70\%$)	\$ 210,000
Add: Desired ending merchandise inventory ($\$224,000 \times 30\%$)	67,200
Total	<u>277,200</u>
Less: Beginning merchandise inventory ($\$210,000 \times 30\%$)	<u>63,000</u>
Required merchandise purchases for July	<u><u>\$214,200</u></u>

Budgeting: Service Companies

- Critical factor in budgeting is *coordinating professional staff needs with anticipated services*
- Problems if *overstaffed*:
 - ◆ Disproportionately high labor costs
 - ◆ Lower profits due to additional salaries
 - ◆ Increased staff turnover due to lack of challenging work
- Problems if *understaffed*:
 - ◆ Lost revenues because existing and future client needs for services cannot be met
 - ◆ Loss of professional staff due to excessive work loads

Budgeting: Not-for-Profit Companies

- Just as important as for profit-oriented company
- However, budget process differs significantly from that of a profit-oriented company
- **Budget on the basis of cash flows** (expenditures and receipts), not on a revenue and expense basis
- The **starting point is usually expenditures**, not receipts
- Management's task is to find receipts needed to support planned expenditures
- Budget must be strictly followed, overspending often illegal



Let's Review

The budget for a merchandiser differs from a budget for a manufacturer because:

- a. A merchandise purchases budget replaces the production budget.
- b. The manufacturing budgets are not applicable.
- c. None of the above.
- d. Both (a) and (b) above

Chapter Review - Brief Exercise 23-8

Perine Company has completed all of its operating budgets. The sales budget for the year shows 50,000 units and total sales of \$2,000,000. The total unit cost of making one unit of sales is \$22. Selling and administrative expenses are expected to be \$300,000. Income taxes are estimated to be \$150,000.

Prepare a budgeted income statement for the year ending December 31, 2008.

Chapter Review - Brief Exercise 23-8

Perine Company
Budgeted Income Statement
For Year Ending December 31, 2008

Sales	\$2,000,000
Cost of Goods Sold (50,000 units @ \$22)	<u>1,100,000</u>
Gross Profit	900,000
Selling & Administrative Expenses	<u>300,000</u>
Income from Operations	600,000
Income Tax Expense	<u>150,000</u>
Net Income	\$450,000

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Weygandt • Kieso • Kimmel



Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Dan R. Ward
Suzanne P. Ward

University of Louisiana at Lafayette

CHAPTER 24

BUDGETARY CONTROL AND RESPONSIBILITY ACCOUNTING

Accounting Principles, Eighth Edition

Study Objectives

1. Describe the concept of budgetary control.
2. Evaluate the usefulness of static budget reports.
3. Explain the development of flexible budgets and the usefulness of flexible budget reports.
4. Describe the concept of responsibility accounting.
5. Indicate the features of responsibility reports for cost centers.

Study Objectives

6. Identify the content of responsibility reports for profit centers.
7. Explain the basis and formula used in evaluating performance in investment centers.

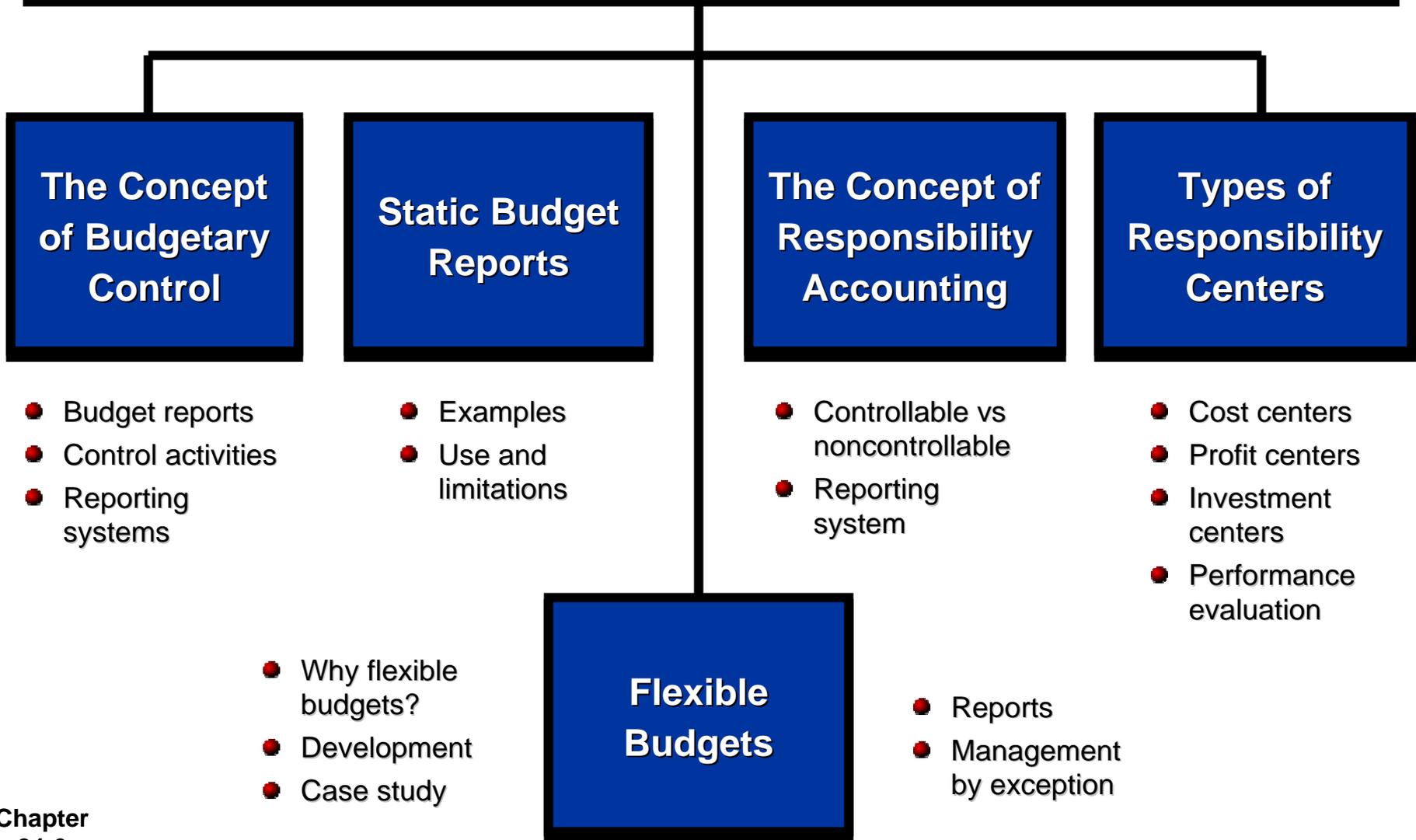


Preview of Chapter

- Considers how budgets are used by management to control operations
- Focuses on two aspects of management control:
 - Budgetary control
 - Responsibility accounting



Budgetary Control and Responsibility Accounting

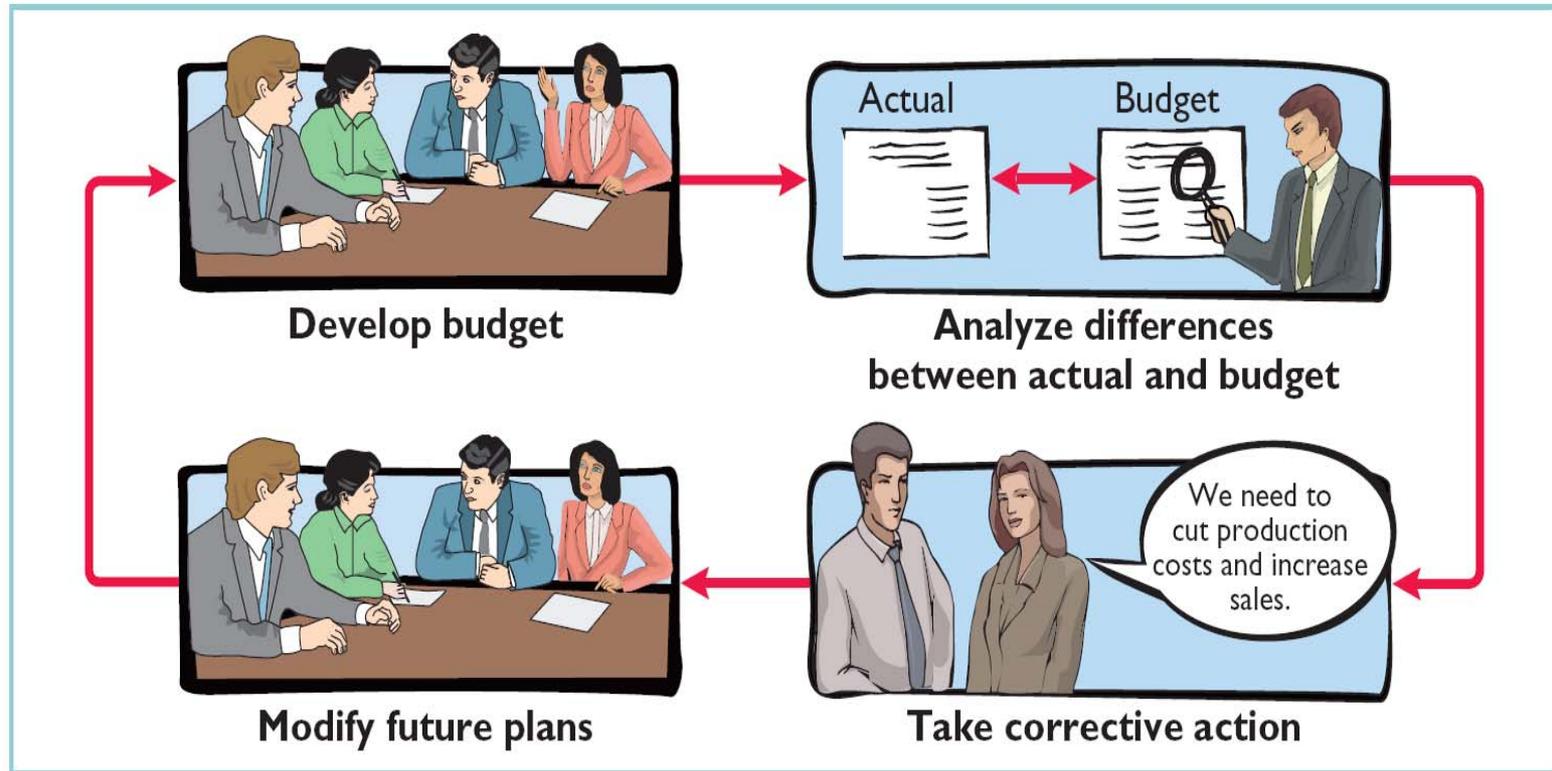


The Concept of Budgetary Control

- A major function of management is to control operations
- Takes place by means of *budget reports* which compare *actual* results with *planned* objectives
- Provides management with feedback on operations
- Budget reports can be prepared as frequently as needed
- Analyze *differences* between actual and planned results and determines causes

The Concept of Budgetary Control

Budgetary control involves the following activities



The Concept of Budgetary Control

Works best when a company has a *formalized reporting system* which:

- *Identifies the name* of the budget report (such as the sales budget or the manufacturing overhead budget)
- *States the frequency* of the report (such as weekly or monthly)
- *Specifies the purpose* of the report
- *Indicates recipient* of the report

The Concept of Budgetary Control

- Schedule below illustrates a partial budgetary control system for a manufacturing company
- Note the frequency of reports and their emphasis on control

<u>Name of Report</u>	<u>Frequency</u>	<u>Purpose</u>	<u>Primary Recipient(s)</u>
Sales	Weekly	Determine whether sales goals are being met	Top management and sales manager
Labor	Weekly	Control direct and indirect labor costs	Vice president of production and production department managers
Scrap	Daily	Determine efficient use of materials	Production manager
Departmental overhead costs	Monthly	Control overhead costs	Department manager
Selling expenses	Monthly	Control selling expenses	Sales manager
Income statement	Monthly and quarterly	Determine whether income objectives are being met	Top management

Let's Review

Budgetary control involves all but one of the following:

- a. Modifying future plans.
- b. Analyzing differences.
- c. Using static budgets.
- d. Determining differences between actual and planned results.

Static Budget Reports

- When used in budgetary control, each budget included in the master budget is considered to be static
- A *static budget* is a projection of budget data at *one level of activity*
- Ignores data for different levels of activity
- Compares actual results with the budget data at the activity level used in the master budget

Static Budget Reports: Sales Budget

Example – Hayes Company

Budget and actual sales data for the Kitchen-mate product for the first and second quarters of 2008 are:

<u>Sales</u>	<u>First Quarter</u>	<u>Second Quarter</u>	<u>Total</u>
Budgeted	\$180,000	\$210,000	\$390,000
Actual	179,000	199,500	378,500
Difference	<u>\$ 1,000</u>	<u>\$ 10,500</u>	<u>\$ 11,500</u>

Static Budget Reports: Sales Budget

Example - Hayes Company, 1st Quarter

HAYES COMPANY			
Sales Budget Report			
For the Quarter Ended March 31, 2008			
<u>Product Line</u>	<u>Budget</u>	<u>Actual</u>	<u>Difference</u>
			<u>Favorable F</u>
			<u>Unfavorable U</u>
Kitchen-Mate ^a	\$180,000	\$179,000	\$1,000 U

^aIn practice, each product line would be included in the report.

- Shows that sales are \$1,000 *under budget* - an *unfavorable* result.
- Difference is less than 1% of budgeted sales - assume *immaterial (not significant)* to top management with no corrective action taken

Static Budget Reports: Sales Budget

Example - Hayes Company, 2nd Quarter

HAYES COMPANY

Sales Budget Report
For the Quarter Ended June 30, 2008

Product Line	Second Quarter			Year-to-Date		
	Budget	Actual	Difference Favorable F Unfavorable U	Budget	Actual	Difference Favorable F Unfavorable U
Kitchen-Mate	\$210,000	\$199,500	\$10,500 U	\$390,000	\$378,500	\$11,500 U

- Shows that sales were \$10,500, or 5%, *below budget*
- *Material difference* between budgeted and actual sales
- Merits investigation - begin by asking the sales manager the cause(s) - consider corrective action

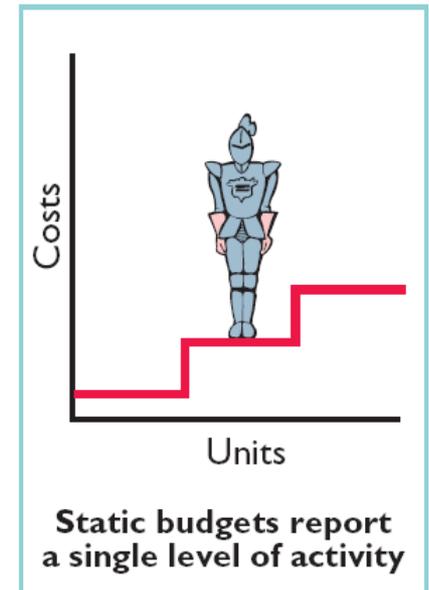
Static Budget Reports - Uses and Limitations

- Appropriate for evaluating a manager's effectiveness in controlling costs when:

Actual level of activity closely approximates the master budget activity level

Behavior of the costs is fixed in response to changes in activity

- **Appropriate for fixed costs**
- **Not appropriate for variable costs**



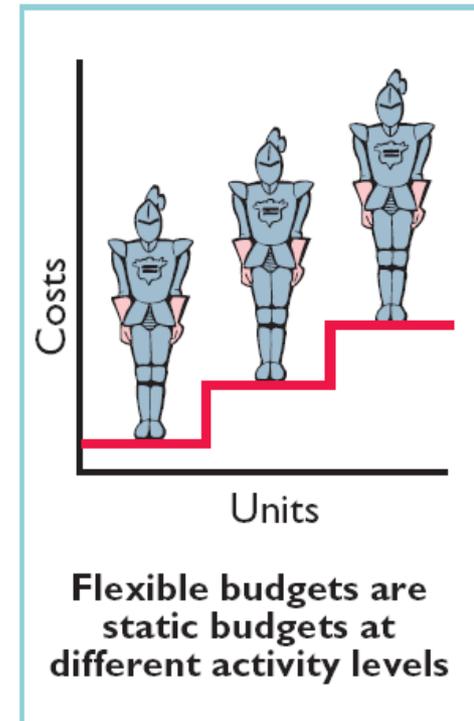
Let's Review

A static budget is useful in controlling costs when cost behavior is:

- a. Mixed.
- b. Fixed.
- c. Variable.
- d. Linear.

Flexible Budgets

- Budgetary process more useful if it is *adaptable to changes in operating conditions*
- Projects budget data for *various levels of activity*
- Essentially, a series of static budgets at different activity levels
- Can be prepared for each type of budget in the master budget



Flexible Budgets

Example - Barton Steel

Static budget for the Forging Department at a 10,000 unit level:

BARTON STEEL	
Manufacturing Overhead Budget (Static)	
Forging Department	
For the Year Ended December 31, 2008	
Budgeted production in units (steel ingots)	10,000
Budgeted costs	
Indirect materials	\$ 250,000
Indirect labor	260,000
Utilities	190,000
Depreciation	280,000
Property taxes	70,000
Supervision	50,000
	<u>\$1,100,000</u>

Flexible Budgets

Example - Continued

Demand increases - produce 12,000 units rather than 10,000

	A	B	C	D	E
1	BARTON STEEL				
2	Manufacturing Overhead Budget Report (Static)				
3	For the Year Ended December 31, 2008				
4				Difference	
5		Budget	Actual	Favorable - F Unfavorable - U	
6	Production in units	10,000	12,000		
7					
8	Costs				
9	Indirect materials	\$ 250,000	\$ 295,000	\$ 45,000	U
10	Indirect labor	260,000	312,000	52,000	U
11	Utilities	190,000	225,000	35,000	U
12	Depreciation	280,000	280,000	0	
13	Property taxes	70,000	70,000	0	
14	Supervision	50,000	50,000	0	
15		\$1,100,000	\$1,232,000	\$132,000	U
16					

Flexible Budgets

Example - Continued

- Very large variances in budget report due to increased demand for steel ingots
 - ◆ Total *unfavorable* difference of \$132,000 - *12% over budget*
- Comparison based on budget data for 10,000 units - the original activity level which is *not* relevant
 - ◆ Meaningless to compare actual variable costs for 12,000 units with budgeted variable costs for 10,000 units
 - ◆ Variable cost increase with production

Budgeted variable amounts should increase proportionately with production

Flexible Budgets

Example - Continued

Budget data for variable costs at 10,000 units:

<u>Item</u>	<u>Total Cost</u>	<u>Per Unit</u>
Indirect materials	\$250,000	\$25
Indirect labor	260,000	26
Utilities	190,000	19
	<u>\$700,000</u>	<u>\$70</u>

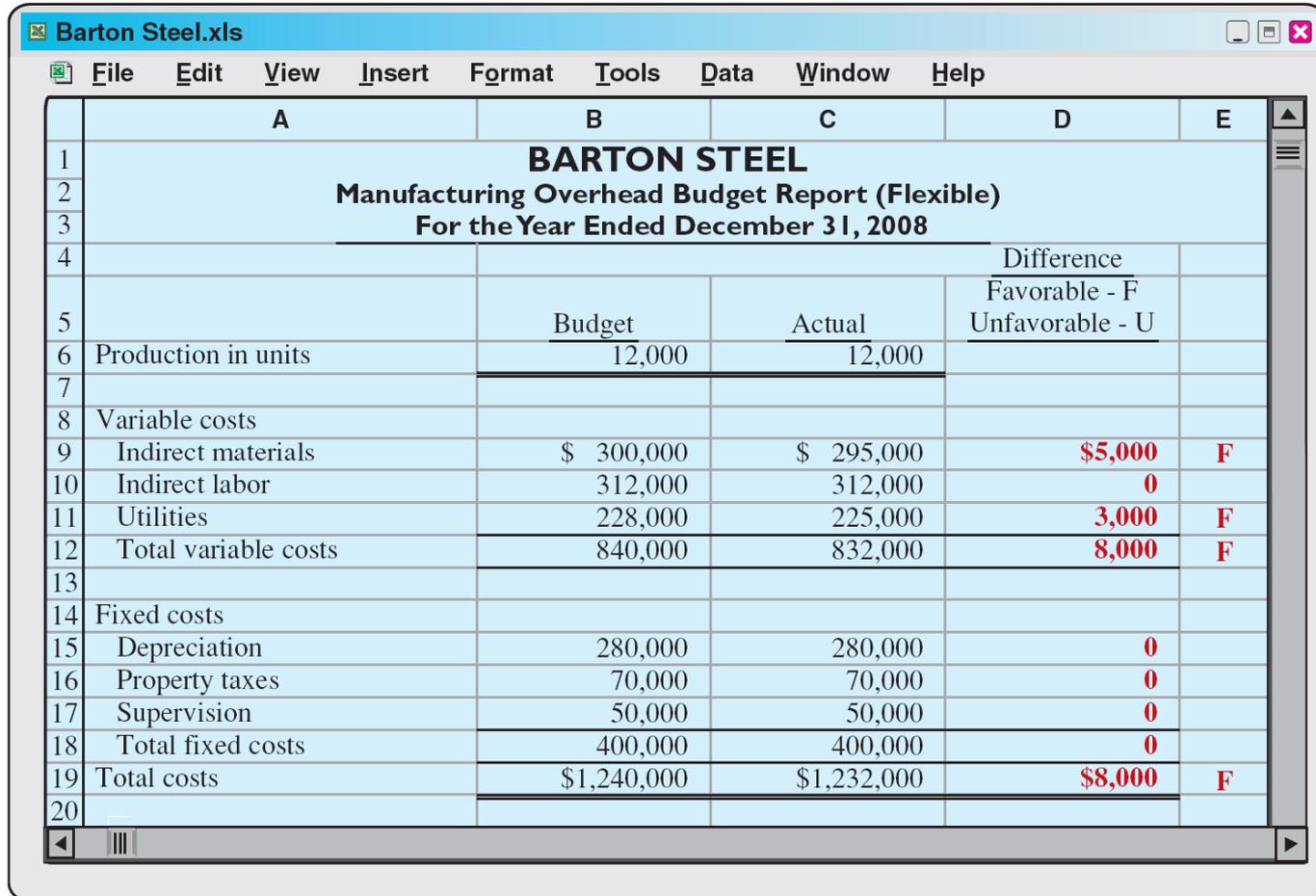
Calculate variable costs at the 12,000 unit level:

<u>Item</u>	<u>Computation</u>	<u>Total</u>
Indirect materials	$\$25 \times 12,000$	\$300,000
Indirect labor	$26 \times 12,000$	312,000
Utilities	$19 \times 12,000$	228,000
		<u>\$840,000</u>

Flexible Budgets

Example - Continued:

New budget report (no change in fixed costs):



	A	B	C	D	E
1	BARTON STEEL				
2	Manufacturing Overhead Budget Report (Flexible)				
3	For the Year Ended December 31, 2008				
4				Difference	
5		Budget	Actual	Favorable - F	
6	Production in units	12,000	12,000	Unfavorable - U	
7					
8	Variable costs				
9	Indirect materials	\$ 300,000	\$ 295,000	\$5,000	F
10	Indirect labor	312,000	312,000	0	
11	Utilities	228,000	225,000	3,000	F
12	Total variable costs	840,000	832,000	8,000	F
13					
14	Fixed costs				
15	Depreciation	280,000	280,000	0	
16	Property taxes	70,000	70,000	0	
17	Supervision	50,000	50,000	0	
18	Total fixed costs	400,000	400,000	0	
19	Total costs	\$1,240,000	\$1,232,000	\$8,000	F
20					

Developing The Flexible Budget

Steps:

- ① Identify the activity index and the relevant range of activity
- ② Identify the variable costs and determine the budgeted variable cost per unit of activity for each cost
- ③ Identify the fixed costs and determine the budgeted amount for each cost
- ④ Prepare the budget for selected increments of activity within the relevant range

Developing The Flexible Budget - A Case Study

Example - Fox Manufacturing Company

- Monthly comparisons of actual and budgeted manufacturing overhead costs for Finishing Department
- 2008 master budget
 - ◆ Expected operating capacity of 120,000 direct labor hours
 - ◆ Overhead costs:

Variable Costs		Fixed Costs	
Indirect materials	\$180,000	Depreciation	\$180,000
Indirect labor	240,000	Supervision	120,000
Utilities	60,000	Property taxes	60,000
Total	<u>\$480,000</u>	Total	<u>\$360,000</u>

Developing The Flexible Budget - A Case Study

Example - Steps for Fox Manufacturing Company

- 1 Identify the activity index and the relevant range
 - activity index: direct labor hours
 - relevant range: 8,000 - 12,000 direct labor hours per month
- 2 Identify the variable costs and determine the budgeted variable cost per unit of activity for each cost

<u>Variable Cost</u>	<u>Computation</u>	<u>Variable Cost per Direct Labor Hour</u>
Indirect materials	$\$180,000 \div 120,000$	\$1.50
Indirect labor	$\$240,000 \div 120,000$	2.00
Utilities	$\$ 60,000 \div 120,000$	0.50
Total		<u>\$4.00</u>

Developing The Flexible Budget - A Case Study

Example - Steps for Fox Manufacturing Company

- ③ Identify the fixed costs and determine the budgeted amount for each cost
 - Three fixed costs per month:
 - depreciation \$15,000
 - property taxes \$5,000
 - supervision \$10,000
- ④ Prepare the budget for selected increments of activity within the relevant range
 - Prepared in increments of 1,000 direct labor hours

Developing The Flexible Budget - A Case Study

Example - Step 4 for Fox Manufacturing Company

FOX MANUFACTURING COMPANY
Flexible Monthly Manufacturing Overhead Budget
Finishing Department
For the Year 2008

	A	B	C	D	E	F
1	FOX MANUFACTURING COMPANY					
2	Flexible Monthly Manufacturing Overhead Budget					
3	Finishing Department					
4	For the Year 2008					
5	Activity level					
6	Direct labor hours	8,000	9,000	10,000	11,000	12,000
7	Variable costs					
8	Indirect materials	\$12,000	\$13,500	\$15,000	\$16,500	\$18,000
9	Indirect labor	16,000	18,000	20,000	22,000	24,000
10	Utilities	4,000	4,500	5,000	5,500	6,000
11	Total variable costs	32,000	36,000	40,000	44,000	48,000
12	Fixed costs					
13	Depreciation	15,000	15,000	15,000	15,000	15,000
14	Supervision	10,000	10,000	10,000	10,000	10,000
15	Property taxes	5,000	5,000	5,000	5,000	5,000
16	Total fixed costs	30,000	30,000	30,000	30,000	30,000
17	Total costs	\$62,000	\$66,000	\$70,000	\$74,000	\$78,000
18						

Developing The Flexible Budget - A Case Study

Example - Fox Manufacturing Company

- Formula to determine total budgeted costs from the budget at any level of activity:

$$\begin{array}{rcccl} \text{Fixed} & & \text{Variable} & & \text{Total} \\ \text{Costs} & + & \text{Costs}^* & = & \text{Budgeted} \\ & & & & \text{Costs} \end{array}$$

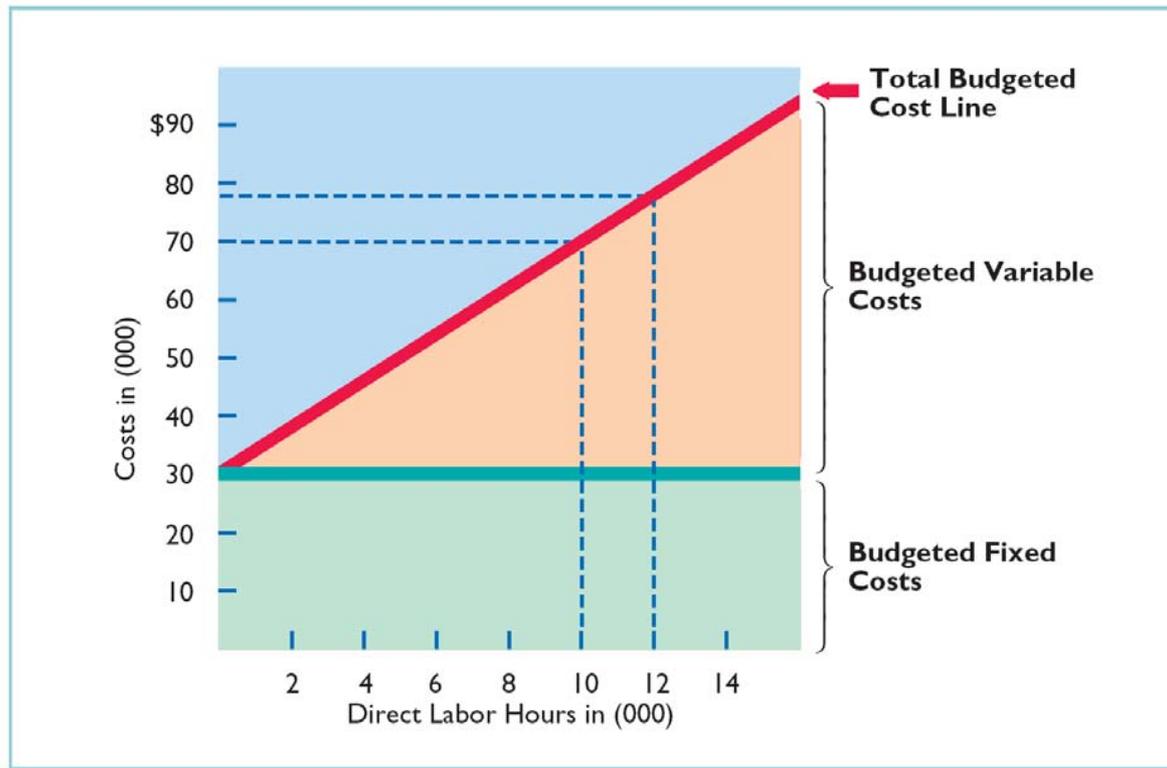
*Total variable cost per unit of activity \times Activity level.

- Determine total budgeted costs for Fox Manufacturing Company with fixed costs of \$30,000 and total variable cost \$4 per unit:
 - ◆ At 9,000 direct labor hours : $\$30,000 + (\$4 \times 9,000) = \$66,000$
 - ◆ At 8,622 direct labor hours: $\$30,000 + (\$4 \times 8,622) = \$64,488$

Developing The Flexible Budget - A Case Study

Example - Fox Manufacturing Company

Graphic flexible budget data highlighting 10,000 and 12,000 activity levels



Flexible Budget Reports

- Monthly comparisons of actual and budgeted manufacturing overhead costs
- A type of internal report
- Consists of two sections:
 - ◆ **Production data** for a selected activity index, such as direct labor hours
 - ◆ **Cost data** for variable and fixed costs
- Widely used in production and service departments to *evaluate a manager's performance* in production control and cost control

Flexible Budget Reports - Example

Fox Manufacturing Company.xls

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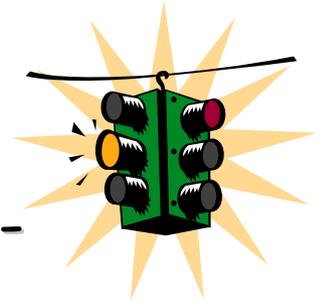
	A	B	C	D	E
1	FOX MANUFACTURING COMPANY				
2	Flexible Manufacturing Overhead Budget Report				
3	Finishing Department				
4	For the Month Ended January 31, 2008				
5				Difference	
6		Budget at	Actual costs at	Favorable - F	
7	Direct labor hours (DLH)	<u>9,000 DLH</u>	<u>9,000 DLH</u>	Unfavorable - U	
8					
9	Variable costs				
10	Indirect materials	\$13,500	\$14,000	\$ 500	U
11	Indirect labor	18,000	17,000	1,000	F
12	Utilities	4,500	4,600	100	U
13	Total variable costs	36,000	35,600	400	F
14					
15	Fixed costs				
16	Depreciation	15,000	15,000	0	
17	Supervision	10,000	10,000	0	
18	Property taxes	5,000	5,000	0	
19	Total fixed costs	30,000	30,000	0	
20	Total costs	\$66,000	\$65,600	\$ 400	F
21					

Management by Exception

- Focus of top management's review of a budget report:

differences between actual and planned results

- Able to focus on problem areas
- Investigate only **material** and **controllable exceptions**
 - ◆ Express **materiality** as a percentage difference from budget - either over or under budget
 - ◆ **Controllability** relates to those items controllable by the manager



Let's Review

At 9,000 direct labor hours, the flexible budget for indirect materials is \$27,000. If \$28,000 of indirect materials costs are incurred at 9,200 direct labor hours, the flexible budget report should show the following difference for indirect materials:

- a. \$1,000 unfavorable.
- b. \$1,000 favorable.
- c. \$400 favorable.
- d. \$400 unfavorable.

The Concept of Responsibility Accounting

- *Involves accumulating and reporting costs* on the basis of the manager who has the authority to make the day-to-day decisions about the items
- Means a manager's performance is evaluated on the matters *directly under the manager's control*



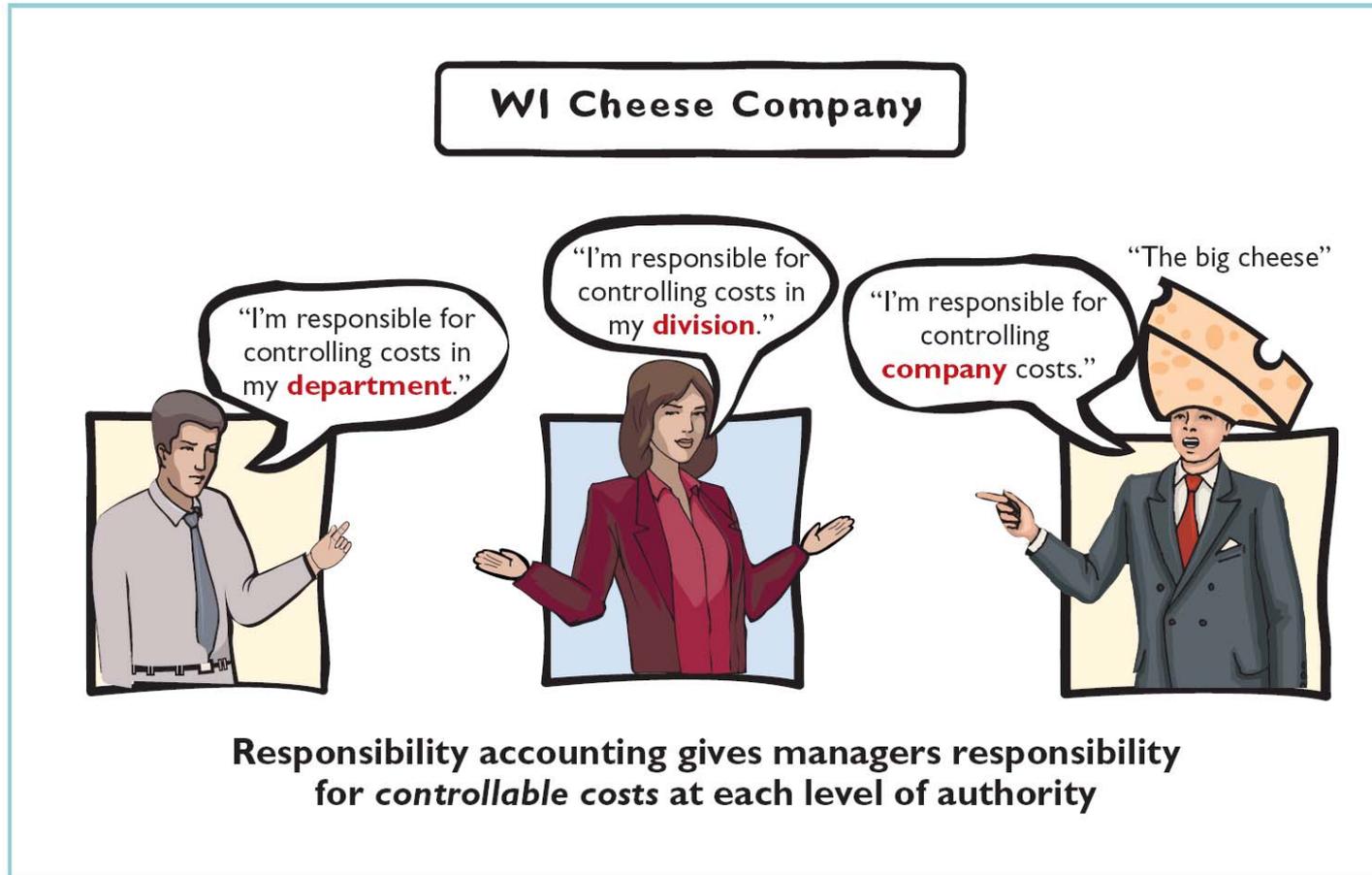
The Concept of Responsibility Accounting

Conditions for using responsibility accounting:

- ① Costs and revenues can be *directly associated* with the specific level of management responsibility
- ② The costs and revenues can be *controlled* by employees at the level of responsibility with which they are associated
- ③ Budget data can be developed for evaluating the *manager's effectiveness* in controlling the costs and revenues

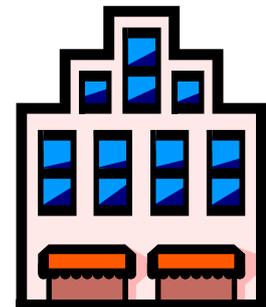
The Concept of Responsibility Accounting

Levels of responsibility for controlling costs



The Concept of Responsibility Accounting

- **Responsibility center** - any individual who has control and is accountable for activities
- May extend from the lowest levels of management to the top strata of management
- Responsibility accounting is especially valuable in a **decentralized company**
 - ◆ control of operations delegated to many managers throughout the organization
 - ◆ **segment** - area of responsibility for which reports are prepared



The Concept of Responsibility Accounting

- Two ***differences*** from budgeting in reporting costs and revenues:
 - ① Distinguishes between **controllable** and **noncontrollable** costs
 - ② Emphasizes or includes ***only items controllable by the individual manager*** in performance reports
- Applies to ***both*** profit and not-for-profit entities
 - Profit entities:** maximize net income
 - Not-for-profit:** minimize cost of providing services

Controllable Vs. Noncontrollable Revenues and Costs

- Can control all costs and revenues at some level of responsibility within the company
- *Critical issue* under responsibility accounting:

*Whether the cost or revenue is controllable
at the level of responsibility with which
it is associated*

Controllable Vs. Noncontrollable Revenues and Costs

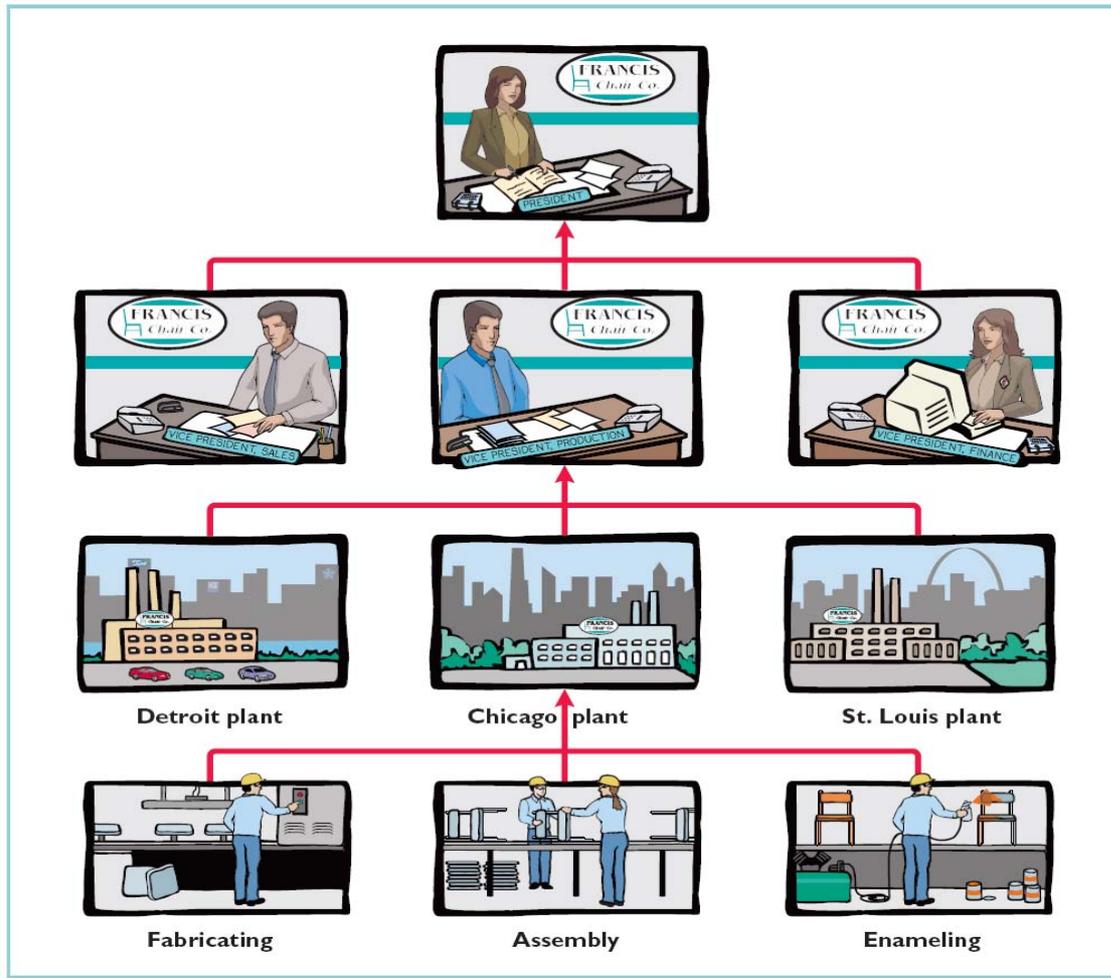
- All costs controllable by top management
- Fewer costs controllable as one moves down to lower levels of management
- ***Controllable costs*** - costs incurred directly by a level of responsibility that are controllable at that level
- ***Noncontrollable costs*** - costs incurred indirectly which are allocated to a responsibility level

Responsibility Reporting System

- Involves preparation of a report for *each level of responsibility* in the company's organization chart
- Begins with the *lowest* level of responsibility and *moves upward* to higher levels
- Permits management by exception at each level of responsibility
- Each higher level can obtain the detailed report for each lower level



Responsibility Reporting System - Example



Report A
President sees summary data of vice presidents.

Report B
Vice president sees summary of controllable costs in his/her functional area.

Report C
Plant manager sees summary of controllable costs for each department in the plant.

Report D
Department manager sees controllable costs of his/her department.

LO 4: Describe the concept of responsibility accounting.

Report A.xls

	A	B	C	D	E
1	REPORT A				
2					
3	To President		Month: January		
4	Controllable Costs:	Budget	Actual	Fav/Unfav	
5	President	\$ 150,000	\$ 151,500	\$ 1,500	U
6	Vice Presidents:				
7	Sales	185,000	187,000	2,000	U
8	Production	1,179,000	1,186,300	7,300	U
9	Finance	100,000	101,000	1,000	U
10	Total	\$1,614,000	\$1,625,800	\$11,800	U

Sheet 1

Report B.xls

	A	B	C	D	E
1	REPORT B				
2					
3	To Vice President Production		Month: January		
4	Controllable Costs:	Budget	Actual	Fav/Unfav	
5	V P Production	\$ 125,000	\$ 126,000	\$1,000	U
6	Assembly Plants:				
7	Detroit	420,000	418,000	2,000	F
8	Chicago	304,000	309,300	5,300	U
9	St. Louis	330,000	333,000	3,000	U
10	Total	\$1,179,000	\$1,186,300	\$7,300	U

Sheet 2

Report C.xls

	A	B	C	D	E
1	REPORT C				
2					
3	To Plant Manager-Chicago		Month: January		
4	Controllable Costs:	Budget	Actual	Fav/Unfav	
5	Chicago Plant	\$110,000	\$113,000	\$3,000	U
6	Departments:				
7	Fabricating	84,000	85,300	1,300	U
8	Enameling	62,000	64,000	2,000	U
9	Assembly	48,000	47,000	1,000	F
10	Total	\$304,000	\$309,300	\$5,300	U

Sheet 3

Report D.xls

	A	B	C	D	E
1	REPORT D				
2					
3	To Fabricating Department Manager		Month: January		
4	Controllable Costs:	Budget	Actual	Fav/Unfav	
5	Direct Materials	\$20,000	\$20,500	\$ 500	U
6	Direct Labor	40,000	41,000	1,000	U
7	Overhead	24,000	23,800	200	F
8	Total	\$84,000	\$85,300	\$1,300	U

Sheet 4

Responsibility Reporting System

- Also permits comparative evaluations
- Plant manager can rank each department manager's effectiveness in controlling manufacturing costs
- Comparative rankings provide incentive for a manager to control costs



Types of Responsibility Centers

- Three basic types:
 - ◆ Cost centers
 - ◆ Profit centers
 - ◆ Investment centers



- Type indicates degree of responsibility that managers have for the performance of the center

Types of Responsibility Centers

● **Cost Center**

- Incurs costs but does not directly generate revenues
- Managers have authority to incur costs
- Managers evaluated on ability to control costs
- Usually a production department or a service department

● **Profit Center**

- Incurs costs and generates revenues
- Managers judged on profitability of center
- Examples include individual departments of a retail store or branch bank offices

Types of Responsibility Centers

● **Investment Center**

Incurs costs, generates revenues, and has investment funds available for use

Manager evaluated on profitability of center and rate of return earned on funds

Often a subsidiary company or a product line

Manager able to control or significantly influence investment decisions such as plant expansion

Types of Responsibility Centers

Types of Responsibility Centers



Expenses

Revenues

Cost center



Expenses & Revenues

Profit center



Expenses & Revenues & Return on Investment

Investment center

Let's Review

Under responsibility accounting, the evaluation of a manager's performance is based on matters that the manager:

- a. Directly controls.
- b. Directly and indirectly controls.
- c. Indirectly controls.
- d. Has shared responsibility for with another manager.

Responsibility Accounting for Cost Centers

- Based on a manager's ability to meet budgeted goals for controllable costs
- Results in responsibility reports which **compare actual controllable costs with flexible budget data**
 - ◆ Include only **controllable costs** in reports
 - ◆ No distinction between variable and fixed costs



Responsibility Accounting for Cost Centers

Example - Fox Manufacturing Company

Assumes department manager can control all manufacturing overhead costs except depreciation, property taxes, and his own monthly salary of \$4,000

FOX MANUFACTURING COMPANY				
Finishing Department				
Responsibility Report				
For the Month Ended January 31, 2008				
			Difference	
			Favorable - F	
			Unfavorable - U	
6	Controllable Cost	Budget	Actual	
7	Indirect materials	\$13,500	\$14,000	\$ 500 U
8	Indirect labor	18,000	17,000	\$1,000 F
9	Utilities	4,500	4,600	100 U
10	Supervision	4,000	4,000	0
11		\$40,000	\$39,600	\$ 400 F
12				

Responsibility Accounting for Profit Centers

- Based on detailed information about both *controllable revenues* and *controllable costs*
- Manager *controls operating revenues* earned, such as sales
- Manager *controls all variable costs* incurred by the center because they vary with sales



Responsibility Accounting for Profit Centers

Direct and Indirect Fixed Costs - both may be present

- **Direct fixed costs**

Relate specifically to one responsibility center

Incurred for the sole benefit of the center

Called **traceable costs** since they can be traced directly to one center

Most controllable by the profit center manager

- **Indirect fixed costs**

Pertain to a company's overall operating activities

Incurred for the benefit of more than one profit center

Called **common costs** since they apply to more than one center

Most are **not controllable** by the profit center manager

Responsibility Accounting for Profit Centers

Responsibility Report

- Shows **budgeted** and **actual controllable** revenues and costs
- Prepared using the cost-volume-profit income statement format:
 - ◆ Deduct controllable fixed costs from the contribution margin
 - ◆ **Controllable margin** - excess of contribution margin over controllable fixed costs
best measure of manager's performance in controlling revenues and costs
 - ◆ Do **not** report noncontrollable fixed costs

Responsibility Accounting for Profit Centers

Example - Mantle Manufacturing Company

\$60,000 indirect fixed costs not controllable by manager

MANTLE MANUFACTURING COMPANY				
Marine Division				
Responsibility Report				
For the Year Ended December 31, 2008				
			Difference	
	Budget	Actual	Favorable - F	
			Unfavorable - U	
Sales	\$1,200,000	\$1,150,000	\$50,000	U
Variable costs				
Cost of goods sold	500,000	490,000	10,000	F
Selling and administrative	160,000	156,000	4,000	F
Total	660,000	646,000	14,000	F
Contribution margin	540,000	504,000	36,000	U
Controllable fixed costs				
Cost of goods sold	100,000	100,000	0	
Selling and administrative	80,000	80,000	0	
Total	180,000	180,000	0	
Controllable margin	\$ 360,000	\$ 324,000	\$36,000	U

Let's Review

In a responsibility report for a profit center, controllable fixed costs are deducted from contribution margin to show:

- a. Profit center margin
- b. Controllable margin
- c. Net income
- d. Income from operations

Responsibility Accounting for Investment Centers

Return on Investment (ROI)

- Primary basis for evaluating the performance of a manager of an investment center
- Shows the effectiveness of the manager in using the assets at his/her disposal
- Useful performance measure
- Factors in ROI formula are controllable by manager

Responsibility Accounting for Investment Centers

Computation of ROI (example data assumed):

Controllable Margin	÷	Average Operating Assets	=	Return on Investment (ROI)
\$1,000,000	÷	\$5,000,000	=	20%

- Operating assets include **current assets and plant assets used in operations** by the center and controlled by manager.
- Exclude **nonoperating assets** such as idle plant assets and land held for future use
- Base average operating assets on the beginning and ending cost or book values of the assets

Responsibility Accounting for Investment Centers

Responsibility Report

- Scope of manager's responsibility affects content
- Investment center is an independent entity for operating purposes
- **All fixed costs controllable by center manager**
- Shows budgeted and actual ROI below controllable margin

Responsibility Accounting for Investment Centers

Example - Mantle Manufacturing Company

Mantle Manufacturing Company.xls					
File Edit View Insert Format Tools Data Window Help					
	A	B	C	D	E
1	MANTLE MANUFACTURING COMPANY				
2	Marine Division				
3	Responsibility Report				
4	For the Year Ended December 31, 2008				
5				Difference	
6		Budget	Actual	Favorable - F	
7	Sales	\$1,200,000	\$1,150,000	\$ 50,000	U
8	Variable costs				
9	Cost of goods sold	500,000	490,000	10,000	F
10	Selling and administrative	160,000	156,000	4,000	F
11	Total	660,000	646,000	14,000	F
12	Contribution margin	540,000	504,000	36,000	U
13	Controllable fixed costs				
14	Cost of goods sold	100,000	100,000	0	
15	Selling and administrative	80,000	80,000	0	
16	Other fixed costs	60,000	60,000	0	
17	Total	240,000	240,000	0	
18	Controllable margin	\$ 300,000	\$ 264,000	\$ 36,000	U
19	Return on investment	15.0%	13.2%	1.8%	U
20		(a)	(b)	(c)	
21					
22		(a) \$ 300,000	(b) \$ 264,000	(c) \$ 36,000	
23		\$2,000,000	\$2,000,000	\$2,000,000	

Judgmental Factors in ROI

ROI approach includes two judgmental factors:

- **Valuation of operating assets**

May be valued at acquisition cost, book value, appraised value, or market value

Each alternative provides a reliable basis for evaluating performance as long as it is consistently applied between periods

- **Margin (income) measure**

May be controllable margin, income from operations, or net income

Only controllable margin is a valid basis for evaluating performance of investment center manager

Improving ROI - Increasing Controllable Margin

- Increase ROI by increasing sales *or* by reducing variable and controllable fixed costs

- ① Increase sales by 10%

Sales increase \$200,000 and contribution margin increases \$90,000 (\$200,000 X .45)

Thus, controllable margin increases to \$690,000 (\$600,000 + \$90,000)

New ROI is 13.8%

$$\text{ROI} = \frac{\text{Controllable margin}}{\text{Average operating assets}} = \frac{\$690,000}{\$5,000,000} = \mathbf{13.8\%}$$

Improving ROI - Reducing Average Operating Assets

- ② Reduce average operating assets by 10% or \$500,000

Average operating assets become \$4,500,000
[\$5,000,000 - (\$5,000,000 X 10%)]

Controllable margin remains unchanged at \$600,000

New ROI becomes 13.3%

$$\text{ROI} = \frac{\text{Controllable margin}}{\text{Average operating assets}} = \frac{\$600,000}{\$4,500,000} = \mathbf{13.3\%}$$

Let's Review

In the formula for return on investment (ROI), the factors for controllable margin and operating assets are, respectively:

- a. Controllable margin percentage and total operating assets.
- b. Controllable margin dollars and average operating assets.
- c. Controllable margin dollars and total assets.
- d.** Controllable margin percentage and average operating assets.

Principles of Performance Evaluation

- Management function that compares actual results with budget goals
- At center of responsibility accounting
- Includes both *behavioral and reporting* principles



Principles of Performance Evaluation - Behavioral Principles

Behavioral principles - human factor critical in evaluating performance:

- Managers should have **direct input into the process of establishing budget goals** for their area of responsibility

Without this input, managers may view goals as unrealistic or arbitrary

Affects motivation to meet targets

- The evaluation should be **based entirely on matters that are controllable** by the manager

Criticism of noncontrollable matters reduces effectiveness of evaluation

May lead to negative reactions by manager and doubts about fairness of evaluation

Principles of Performance Evaluation - Behavioral Principles

- Top management should **support the evaluation process**

Managers lose faith in process when top management ignores, overrules, or bypasses established procedures

- The evaluation process must allow managers to **respond to their evaluations**

Evaluation is not a one-way street

Managers must be able to defend their performance

Evaluation without feedback is impersonal and ineffective

- The evaluation should **identify both good and poor performance**

Praise is a powerful motivator

Manager compensation should include rewards for meeting goals

Principles of Performance Evaluation - Reporting Principles

- Reporting principles for performance reports include reports which
 - ◆ Contain only *data that are controllable by the manager* of the responsibility center
 - ◆ Provide *accurate and reliable budget data* to measure performance
 - ◆ *Highlight significant differences* between actual results and budget goals
 - ◆ Are *tailor-made* for the intended evaluation
 - ◆ Are *prepared at reasonable intervals*

Chapter Review - Brief Exercise 24-8

For the year ending December 31, 2008, Kaspar Company accumulates the following data for the Plastics Division which it operates as an investment center: contribution margin \$700,000 budget, \$715,000 actual; controllable fixed costs \$300,000 budget, \$309,000 actual. Average operating assets for the year were \$2,000,000.

Prepare a responsibility report for the Plastics Division beginning with contribution margin.

Chapter Review - Brief Exercise 24-8

Kaspar Company Responsibility Report For Year Ending December 31, 2008

	Budget	Actual	Difference	
Contribution Margin	\$700,000	\$715,000	\$15,000	F
Controllable Fixed Costs	<u>300,000</u>	<u>309,000</u>	<u>9,000</u>	U
Controllable Margin	\$400,000	\$406,000	\$ 6,000	F

Favorable - F

Unfavorable - U

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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Coby Harmon
University of California, Santa Barbara

CHAPTER 25

Standard Costs and Balanced Scorecard

Accounting Principles, Eighth Edition

Study Objectives

1. Distinguish between a standard and a budget.
2. Identify the advantages of standard costs.
3. Describe how companies set standards.
4. State the formulas for determining direct materials and direct labor variances.
5. State the formulas for determining manufacturing overhead variances.
6. Discuss the reporting of variances.
7. Prepare an income statement for management under a standard costing system.
8. Describe the balanced scorecard approach to performance evaluation.

Standard Costs and Balanced Scorecard

The Need for Standards

- Standards vs. budgets
- Why standard costs?

Setting Standard Costs

- Ideal vs. normal
- Case study

Analyzing and Reporting Variances from Standards

- Direct materials variances
- Direct labor variances
- Manufacturing overhead variances
- Reporting variances
- Statement presentation

Balanced Scorecard

- Financial perspective
- Customer perspective
- Internal process perspective
- Learning and growth perspective

The Need for Standards

Distinguishing between Standards and Budgets

Both **standards** and **budgets** are predetermined costs, and both contribute to management planning and control.

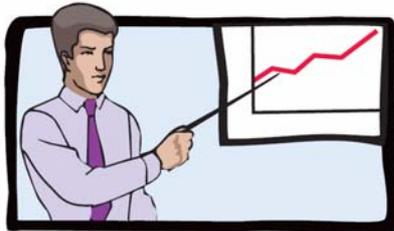
There is a difference:

- A standard is a **unit** amount.
- A budget is a **total** amount

The Need for Standards

Advantages of Standard Costs

Illustration 25-1



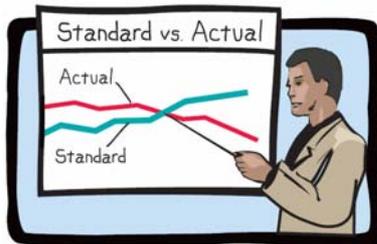
Facilitate management planning



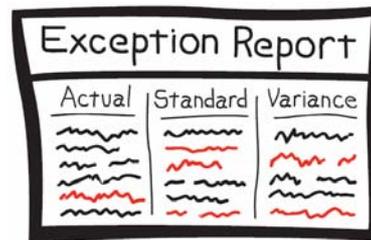
Promote greater economy by making employees more "cost-conscious"



Useful in setting selling prices



Contribute to management control by providing basis for evaluation of cost control



Exception Report		
Actual	Standard	Variance
~~~~~	~~~~~	~~~~~
~~~~~	~~~~~	~~~~~
~~~~~	~~~~~	~~~~~
~~~~~	~~~~~	~~~~~

Useful in highlighting variances in management by exception



Simplify costing of inventories and reduce clerical costs

Setting Standard Costs—a Difficult Task

Setting standard costs requires input from all persons who have responsibility for costs and quantities.

Standards should change whenever managers determine that the existing standard is not a good measure of performance.

Setting Standard Costs—a Difficult Task

Ideal versus Normal Standards

Companies set standards at one of two levels:

- **Ideal standards** represent optimum levels of performance under perfect operating conditions.
- **Normal standards** represent efficient levels of performance that are attainable under expected operating conditions.

Properly set, normal standards should be **rigorous but attainable**.

Setting Standard Costs—a Difficult Task

Question

Most companies that use standards set them at a(n):

- a. optimum level.
- b. ideal level.
- c. normal level.
- d. practical level.

Setting Standard Costs—a Difficult Task

A Case Study

To establish the standard cost of producing a product, it is necessary to establish standards for each manufacturing cost element—

- direct materials,
- direct labor, and
- manufacturing overhead.

The standard for each element is derived from the standard price to be paid and the standard quantity to be used.

Setting Standard Costs—a Difficult Task

Direct Materials

The **direct materials price standard** is the cost per unit of direct materials that should be incurred.

Illustration 25-2

<u>Item</u>	<u>Price</u>
Purchase price, net of discounts	\$2.70
Freight	0.20
Receiving and handling	0.10
Standard direct materials price per pound	<u><u>\$3.00</u></u>

Setting Standard Costs—a Difficult Task

Direct Materials

The **direct materials quantity standard** is the quantity of direct materials that should be used per unit of finished goods.

Illustration 25-3

Item	Quantity (Pounds)
Required materials	3.5
Allowance for waste	0.4
Allowance for spoilage	0.1
Standard direct materials quantity per unit	4.0

The standard direct materials cost is \$12.00 ($\3.00×4.0 pounds).

Setting Standard Costs—a Difficult Task

Review Question

The direct materials price standard should include an amount for all of the following except:

- a. receiving costs.
- b. storing costs.
- c. handling costs.
- d. normal spoilage costs.**

Setting Standard Costs—a Difficult Task

Direct Labor

The **direct labor price standard** is the rate per hour that should be incurred for direct labor.

Illustration 25-4

<u>Item</u>	<u>Price</u>
Hourly wage rate	\$ 7.50
COLA	0.25
Payroll taxes	0.75
Fringe benefits	1.50
Standard direct labor rate per hour	<u><u>\$10.00</u></u>

Setting Standard Costs—a Difficult Task

Direct Labor

The **direct labor quantity standard** is the time that should be required to make one unit of the product.

Illustration 25-5

Item	Quantity (Hours)
Actual production time	1.5
Rest periods and cleanup	0.2
Setup and downtime	0.3
Standard direct labor hours per unit	2.0

The standard direct labor cost is \$20 ($\10.00×2.0 hours).

Setting Standard Costs—a Difficult Task

Manufacturing Overhead

For manufacturing overhead, companies use a **standard predetermined overhead rate** in setting the standard.

This overhead rate is determined by dividing budgeted overhead costs by an expected standard activity index, such as standard direct labor hours or standard machine hours.

Setting Standard Costs—a Difficult Task

Manufacturing Overhead

The company expects to produce 13,200 gallons during the year at normal capacity. It takes 2 direct labor hours for each gallon.

Illustration 25-6

<u>Budgeted Overhead Costs</u>	<u>Amount</u>	÷	<u>Standard Direct Labor Hours</u>	=	<u>Overhead Rate per Direct Labor Hour</u>
Variable	\$ 79,200		26,400		\$3.00
Fixed	52,800		26,400		2.00
Total	<u>\$132,000</u>		26,400		<u>\$5.00</u>

The standard manufacturing overhead rate per gallon is \$10 (\$5 × 2 hours)

Setting Standard Costs—a Difficult Task

Total Standard Cost Per Unit

The total standard cost per unit is the sum of the standard costs of direct materials, direct labor, and manufacturing overhead.

Illustration 25-7

<u>Manufacturing Cost Elements</u>	<u>Standard Quantity</u>	×	<u>Standard Price</u>	=	<u>Standard Cost</u>
Direct materials	4 pounds		\$ 3.00		\$ 12.00
Direct labor	2 hours		\$ 10.00		\$ 20.00
Manufacturing overhead	2 hours		\$ 5.00		\$ 10.00
					<u>\$ 42.00</u>

The total standard cost per gallon is \$42.

Analyzing and Reporting Variances From Standards

One of the major management uses of standard costs is to identify variances from standards.

Variances are the differences between total actual costs and total standard costs.

Analyzing and Reporting Variances

Question

A variance is favorable if actual costs are:

- a. less than budgeted costs.
- b. less than standard costs.**
- c. greater than budgeted costs.
- d. greater than standard costs

Analyzing and Reporting Variances

When actual costs exceed standard costs, the variance is **unfavorable**.

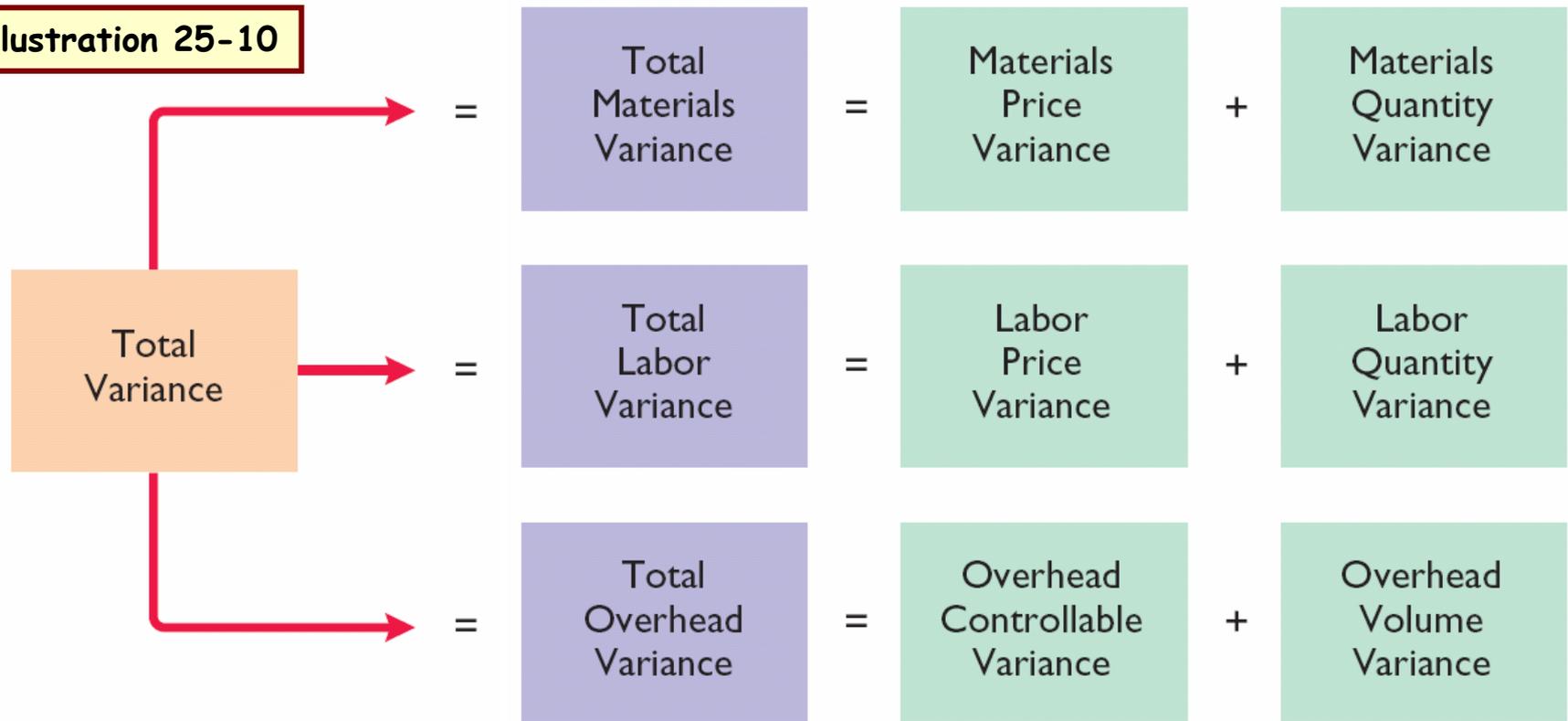
When actual costs are less than standard costs, the variance is **favorable**.

To interpret properly the significance of a variance, you must analyze it to determine the underlying factors. Analyzing variances begins by determining the cost elements that comprise the variance.

Analyzing and Reporting Variances

For each manufacturing cost element, a company computes a total dollar, price, and quantity variance.

Illustration 25-10



Analyzing and Reporting Variances

Illustration: Inman Corporation manufactures a single product. The standard cost per unit of product is shown below.

Direct materials—2 pounds of plastic at \$5.00 per pound	\$	10.00	
Direct labor—2 hours at \$12.00 per hour			24.00
Variable manufacturing overhead			12.00
Fixed manufacturing overhead	\$18.00		6.00
Total standard cost per unit		\$	<u>52.00</u>

The predetermined manufacturing overhead rate is \$9 per direct labor hour ($\$18.00/2$). It was computed from a master manufacturing overhead budget based on normal production of 180,000 direct labor hours (90,000 units) for

Illustration continued 

LO 4 State the formulas for determining direct materials and direct labor variances.

Analyzing and Reporting Variances

the month. The master budget showed total variable costs of \$1,080,000 (\$6.00 per hour) and total fixed overhead costs of \$540,000 (\$3.00 per hour). Actual costs for November in producing 7,600 units were as follows.

Direct materials (15,000 pounds)	\$ 73,500
Direct labor (14,900 hours)	181,780
Variable overhead	88,990
Fixed overhead	44,000
Total manufacturing costs	<u>\$ 388,270</u>

The purchasing department buys the quantities of raw materials that are expected to be used in production each month. Raw materials inventories, therefore, can be ignored.

Analyzing and Reporting Variances

Direct Materials Variances

In producing 7,600 units, the company used 15,000 pounds of direct materials. These were purchased at a cost of \$4.90 per unit (\$73,500/15,000 pounds). The standard quantity of materials is 15,200 pounds (7,600 x 2). The **total materials variance** is computed from the following formula.

$$\begin{array}{rcl} \text{Actual Quantity} & & \text{Standard Quantity} & & \text{Total Materials} \\ \times \text{Actual Price} & - & \times \text{Standard Price} & = & \text{Variance} \\ (\text{AQ}) \times (\text{AP}) & & (\text{SQ}) \times (\text{SP}) & & (\text{TMV}) \\ \\ \$73,500 & - & \$76,000 & = & \$2,500 \text{ F} \\ (15,000 \times \$4.90) & & (15,200 \times \$5.00) & & \end{array}$$

Analyzing and Reporting Variances

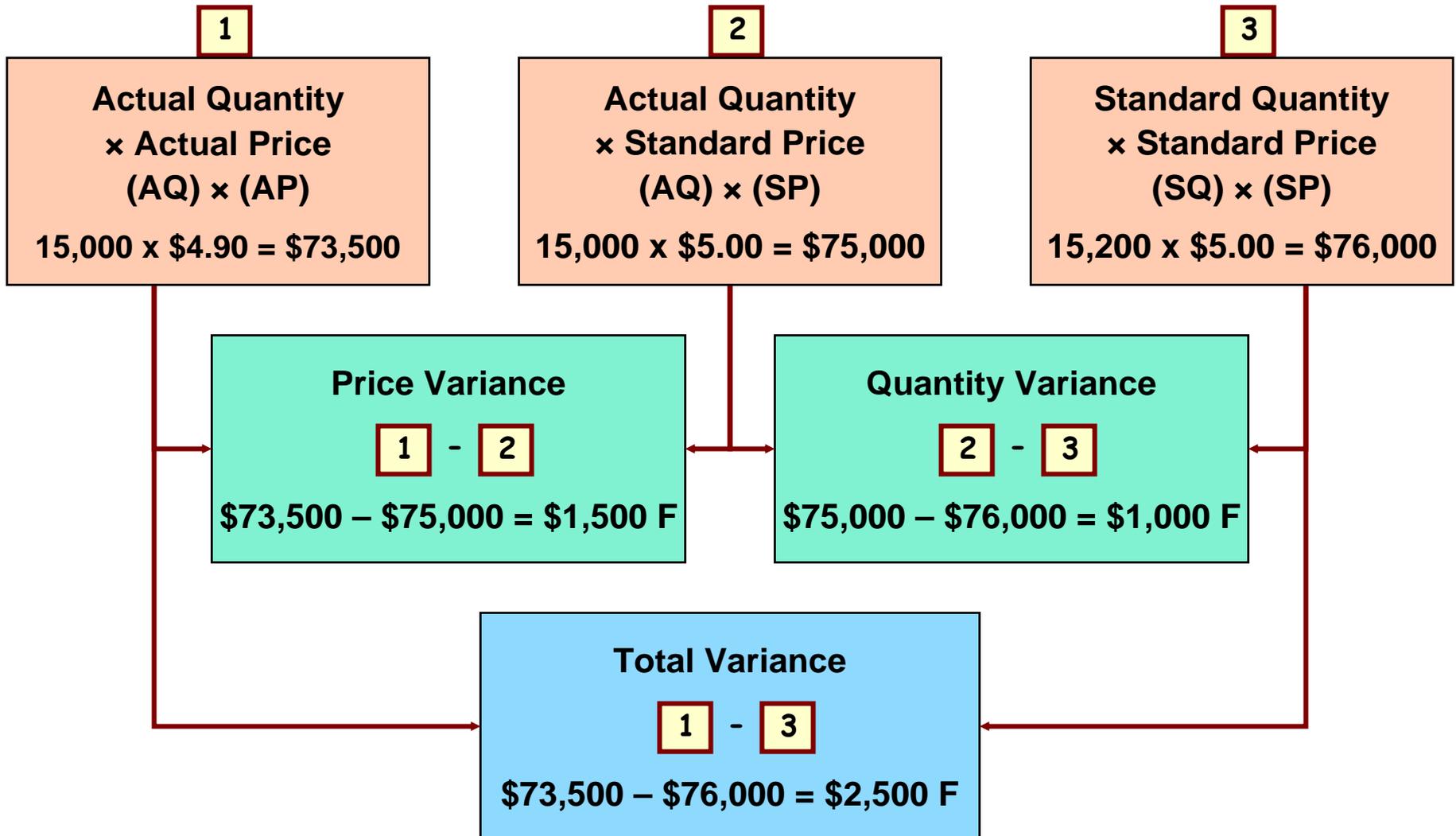
Direct Materials Variances

The **materials quantity variance** is determined from the following formula.

$$\begin{array}{rclcl} \text{Actual Quantity} & & \text{Standard Quantity} & & \text{Materials} \\ \times \text{Standard Price} & - & \times \text{Standard Price} & = & \text{Quantity} \\ (\text{AQ}) \times (\text{SP}) & & (\text{SQ}) \times (\text{SP}) & & \text{Variance} \\ & & & & (\text{MQV}) \\ \\ \$75,000 & - & \$76,000 & = & \$1,000 \text{ F} \\ (15,000 \times \$5.00) & & (15,200 \times \$5.00) & & \end{array}$$

Companies sometimes use a matrix to analyze a variance.

Matrix for Direct Materials Variances



Analyzing and Reporting Variances

Causes of Material Variances

Materials price variance - factors that affect the price paid for raw materials include the availability of quantity and cash discounts, the quality of the materials requested, and the delivery method used. To the extent that these factors are considered in setting the price standard, the **purchasing department** is responsible

Materials quantity variance - if the variance is due to inexperienced workers, faulty machinery, or carelessness, the **production department** is responsible.

Analyzing and Reporting Variances

Direct Labor Variances

In producing 7,600 units, the company incurred 14,900 direct labor hours at an average hourly rate of \$12.20 (\$181,780 / 14,900 hours). The standard hours allowed for the units produced were 15,200 hours (7,600 units x 2 hours). The standard labor rate was \$12 per hour. The **total labor variance** is computed as follows.

Actual Hours x Actual Rate (AH) x (AR)	-	Standard Hours x Standard Rate (SH) x (SR)	=	Total Labor Variance (TLV)
\$181,780 (14,900 X \$12.20)	-	\$182,400 (15,200 X \$12.00)	=	\$620 F

Analyzing and Reporting Variances

Direct Labor Variances

Next, the company analyzes the total variance to determine the amount attributable to price (costs) and to quantity (use). The **labor price variance** is computed from the following formula.

$$\begin{array}{rclcl} \text{Actual Hours} & & \text{Actual Hours} & & \text{Labor Price} \\ \times \text{Actual Rate} & - & \times \text{Standard Rate} & = & \text{Variance} \\ (\text{AH}) \times (\text{AR}) & & (\text{AH}) \times (\text{SR}) & & (\text{LPV}) \\ \\ \$181,780 & - & \$178,800 & = & \$2,980 \text{ U} \\ (14,900 \times \$12.20) & & (14,900 \times \$12.00) & & \end{array}$$

Analyzing and Reporting Variances

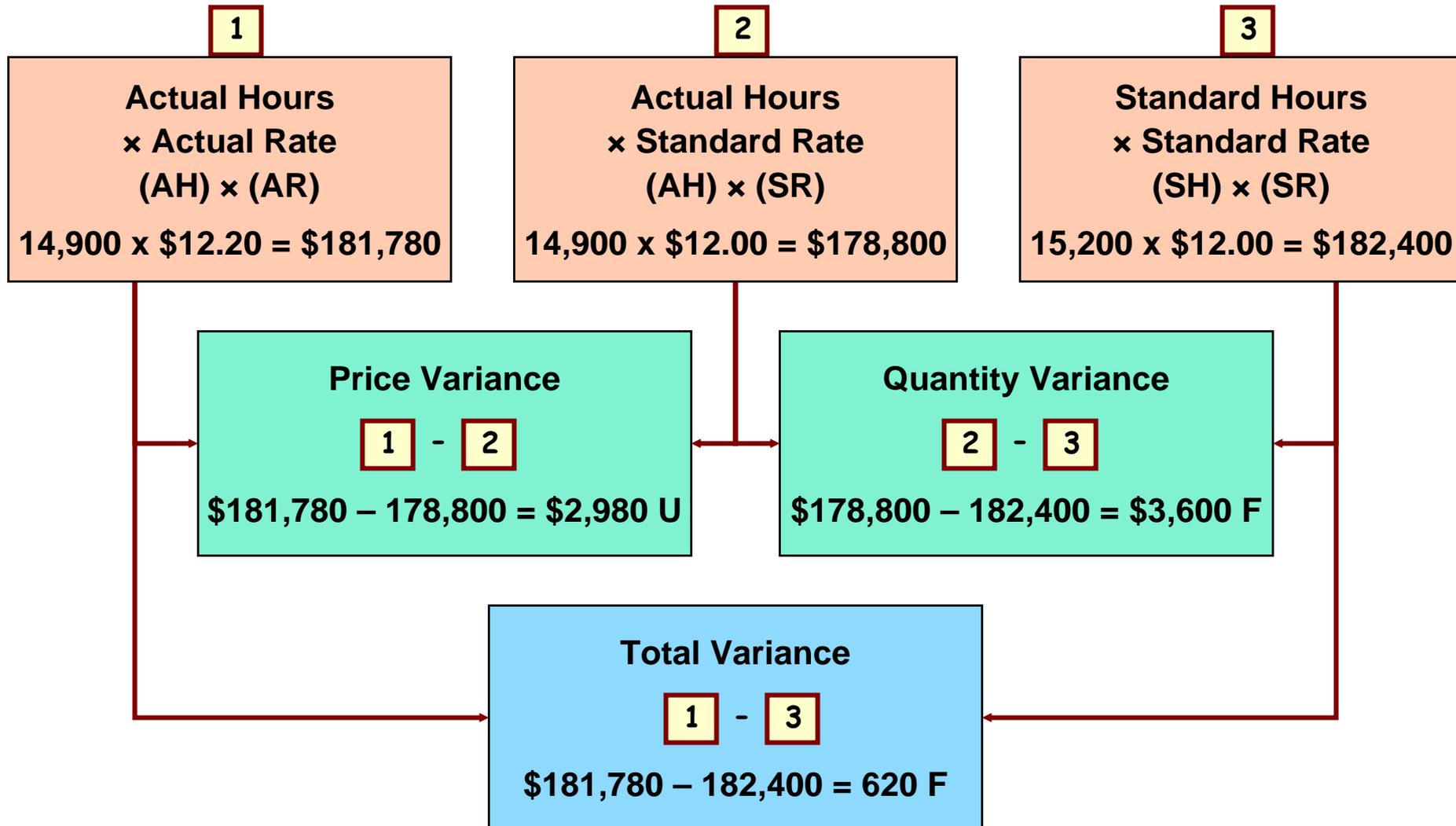
Direct Labor Variances

The **labor quantity variance** is determined from the following formula.

$$\begin{array}{rclcl} \text{Actual Hours} & & \text{Standard Hours} & & \text{Labor} \\ \times \text{Standard Rate} & - & \times \text{Standard Rate} & = & \text{Quantity} \\ (\text{AH}) \times (\text{SR}) & & (\text{SH}) \times (\text{SR}) & & \text{Variance} \\ & & & & (\text{LQV}) \\ \\ \$178,800 & - & \$182,400 & = & \$3,600 \text{ F} \\ (14,900 \times \$12.00) & & (15,200 \times \$12.00) & & \end{array}$$

Companies sometimes use a matrix to analyze a variance.

Matrix for Direct Labor Variances



Analyzing and Reporting Variances

Causes of Labor Variances

Labor price variance - usually results from two factors: (1) paying workers **higher wages than expected**, and (2) **misallocation of workers**. The manager who authorized the wage increase is responsible for the higher wages. The production department generally is responsible for variances resulting from misallocation of the workforce.

Labor quantity variances - relates to the **efficiency of workers**. The cause of a quantity variance generally can be traced to the production department.

Analyzing and Reporting Variances

Manufacturing Overhead Variances

Manufacturing overhead variances involves total overhead variance, overhead controllable variance, and overhead volume variance.

Manufacturing overhead costs are applied to work in process on the basis of the **standard hours allowed** for the work done.

Analyzing and Reporting Variances

Total Overhead Variance

The **total overhead variance** is the difference between actual overhead costs and overhead costs applied to work done.

Total Overhead Costs:

Variable overhead	\$ 88,990	
Fixed overhead	44,000	\$ 132,990
	<hr/>	

Overhead Applied:

Standard hours allowed	15,200	
Rate per direct labor hour	\$ 9 *	\$ 136,800
	<hr/>	<hr/>

Total Overhead Variance \$ 3,810 F

* Standard per unit overhead cost (\$18) ÷ 2 direct labor hours per unit.

Analyzing and Reporting Variances

Total Overhead Variance

The **overhead variance** is generally analyzed through a price variance and a quantity variance.

Overhead controllable variance (*price variance*) shows whether overhead costs are effectively controlled.

Overhead volume variance (*quantity variance*) relates to whether fixed costs were under- or over-applied during the year.

Analyzing and Reporting Variances

Overhead Controllable Variance

Compare actual overhead costs incurred with budgeted costs for the standard hours allowed.

Budgeted Overhead:

Monthly budgeted fixed overhead
(\$540,000/12 months)

Standard hours allowed

Variable overhead rate (\$12/2)

\$136,200

\$ 45,000

15,200

\$ 6

91,200

Actual Overhead Costs:

Variable overhead

Fixed overhead

\$ 88,990

44,000

132,990

Overhead Controllable Variance

\$ 3,210 F

Analyzing and Reporting Variances

Overhead Volume Variance

Difference between normal capacity hours and standard hours allowed times the fixed overhead rate.

Budgeted Overhead:

Normal capacity (in hours)	15,000	
Less: Standard hours allowed	15,200	
	<hr/>	
	200	
Fixed overhead rate (\$6/2)	\$ 3	
	<hr/>	
Overhead volume variance	600	F
	<hr/> <hr/>	

Analyzing and Reporting Variances

In computing the overhead variances, it is important to remember the following.

1. Standard hours allowed are used in each of the variances.
2. Budgeted costs for the controllable variance are derived from the flexible budget.
3. The controllable variance generally pertains to variable costs.
4. The volume variance pertains solely to fixed costs.

Analyzing and Reporting Variances

Causes Of Manufacturing Overhead Variances

Controllable variance - variance rests with the production department. Cause of an unfavorable variance may be:

1. higher than expected use of indirect materials, indirect labor, and factory supplies, or
2. increases in indirect manufacturing costs.

Overhead volume variance - variance can rest with the production department, if the cause is inefficient use of direct labor or machine breakdowns.

Analyzing and Reporting Variances

Reporting Variances

- All variances should be reported to appropriate levels of management as soon as possible.
- The form, content, and frequency of variance reports vary considerably among companies.
- Facilitate the principle of "management by exception."
- Top management normally looks for significant variances.

Analyzing and Reporting Variances

Statement Presentation of Variances

In income statements prepared for management under a standard cost accounting system, cost of goods sold is stated at standard cost and the variances are disclosed separately.

Illustration 25-28

XONIC, INC.		
Income Statement		
For the Month Ended June 30, 2008		
Sales		\$60,000
Cost of goods sold (at standard)		<u>42,000</u>
Gross profit (at standard)		18,000
Variances		
Materials price	\$ 420	
Materials quantity	600	
Labor price	(420)	
Labor quantity	1,000	
Overhead controllable	500	
Overhead volume	400	
Total variance unfavorable		<u>2,500</u>
Gross profit (actual)		15,500
Selling and administrative expenses		<u>3,000</u>
Net income		<u><u>\$12,500</u></u>

Analyzing and Reporting Variances

Review Question

Which of the following is incorrect about variance reports?

- a. They facilitate "management by exception".
- b. They should only be sent to the top level of management.
- c. They should be prepared as soon as possible.
- d. They may vary in form, content, and frequency among companies.

Balanced Scorecard

The **balanced scorecard** incorporates financial and nonfinancial measures in an integrated system that links performance measurement and a company's strategic goals.

The balanced scorecard evaluates company performance from a series of "perspectives." The four most commonly employed perspectives are as follows.



Balanced Scorecard

Review Question

Which of the following would not be an objective used in the customer perspective of the balanced scorecard approach?

- a. Percentage of customers who would recommend product to a friend.
- b. Customer retention.
- c. Brand recognition.
- d. Earning per share.

Balanced Scorecard

In summary, the balanced scorecard does the following:

1. Employs both financial and nonfinancial measures.
2. Creates linkages so that high-level corporate goals can be communicated all the way down to the shop floor.
3. Provides measurable objectives for such nonfinancial measures as product quality, rather than vague statements such as "We would like to improve quality."
4. Integrates all of the company's goals into a single performance measurement system, so that an inappropriate amount of weight will not be placed on any single goal.

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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Dan R. Ward
Suzanne P. Ward

University of Louisiana at Lafayette

CHAPTER 26

INCREMENTAL ANALYSIS AND CAPITAL BUDGETING

Accounting Principles, Eighth Edition

Study Objectives

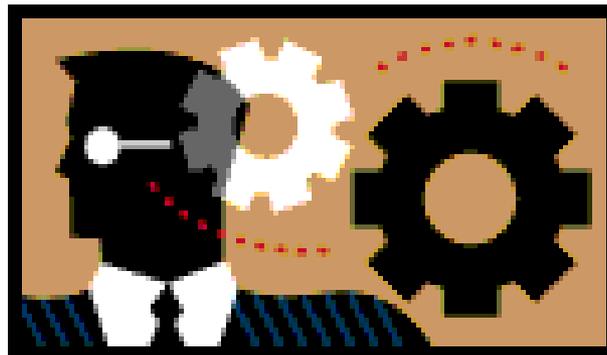
1. Indicate the steps in management's decision-making process.
2. Describe the concept of incremental analysis.
3. Identify the relevant costs in accepting an order at a special price.
4. Identify the relevant costs in a make-or-buy decision.
5. Give the decision rule for whether to sell or process materials.

Study Objectives - Continued

6. Identify the factors to consider in retaining or replacing equipment.
7. Explain the relevant factors in whether to eliminate an unprofitable segment.
8. Determine which products to make and sell when resources are limited.
9. Contrast annual rate of return and cash payback in capital budgeting.
10. Distinguish between the net present value and internal rate of return methods.

Preview of Chapter

- An important purpose of management accounting is to provide managers with relevant information for decision making.
- Considers uses of incremental analysis and capital budgeting in management's decision making process



Incremental Analysis and Capital Budgeting

Incremental Analysis

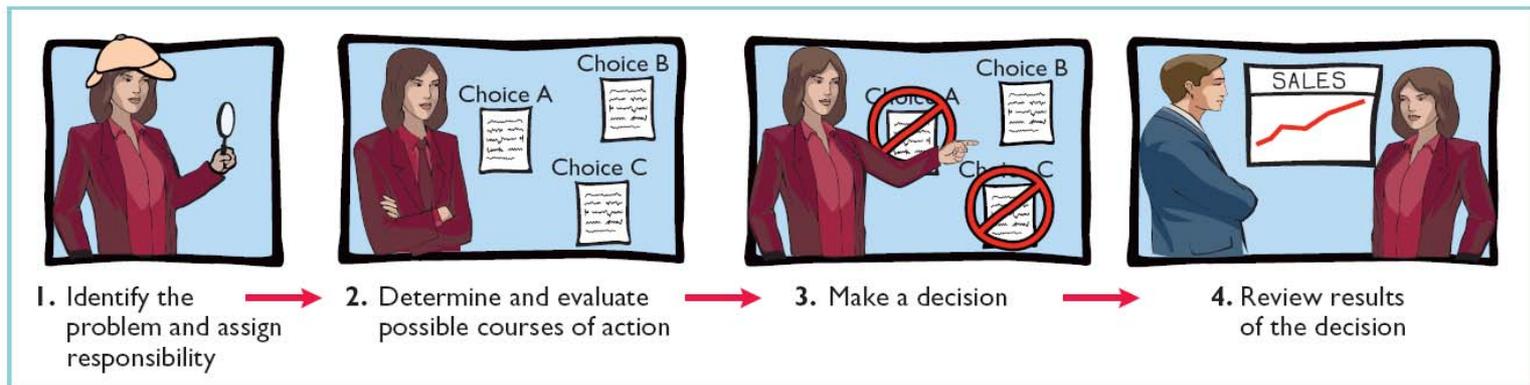
- Management's decision-making process
- How incremental analysis works
- Types of incremental analysis

Capital Budgeting

- Process for evaluation
- Annual rate of return
- Cash payback
- Discounted cash flow

Management's Decision-Making Process

- Important management function
- Does not always follow a set pattern
- Decisions vary in scope, urgency, and importance
- Steps usually involved in process include:



Management's Decision-Making Process

- Considers both financial and non-financial information
- *Financial information* includes revenues and costs as well as their effect on overall profitability
- *Non-financial information* includes effect on employee turnover, the environment, or overall company image



Management's Decision-Making Process

Incremental Analysis Approach

- Decisions involve a *choice* among alternative actions
- Financial data relevant to a decision are the *data that vary in the future among alternatives*
 - Both costs and revenues may vary *or*
 - Only revenues may vary *or*
 - Only costs may vary



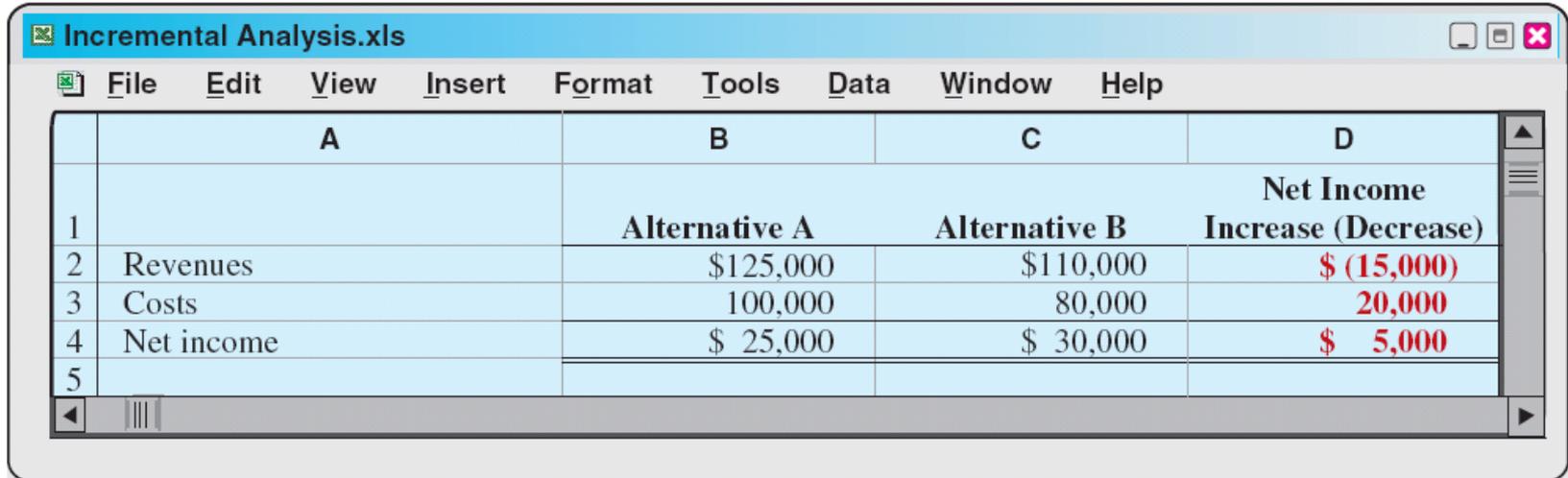
Management's Decision-Making Process

Incremental Analysis

- Process used to identify the financial data that change under alternative courses of action
- Identifies probable effects of decisions on future earnings
- Also called *differential analysis* because it focuses on differences

How Incremental Analysis Works

Basic Example



	A	B	C	D
1		Alternative A	Alternative B	Net Income Increase (Decrease)
2	Revenues	\$125,000	\$110,000	\$ (15,000)
3	Costs	100,000	80,000	20,000
4	Net income	\$ 25,000	\$ 30,000	\$ 5,000
5				

Comparison of Alternative B with Alternative A:

- Incremental revenue is \$15,000 *less* under Alternative B
- Incremental *cost savings* of \$20,000 is realized
- Alternative B produces *\$5,000 more net income*

How Incremental Analysis Works

- Sometimes involves changes that seem contrary to intuition
- Variable costs sometimes **do not change** under alternatives
- Fixed costs sometimes **change** between alternatives
- Incremental analysis **not** the same as CVP analysis

Let's Review

Incremental analysis is the process of identifying the financial data that

- a. Do not change under alternative courses of action.
- b. Change under alternative courses of action.
- c. Are mixed under alternative courses of action.
- d. None of the above.

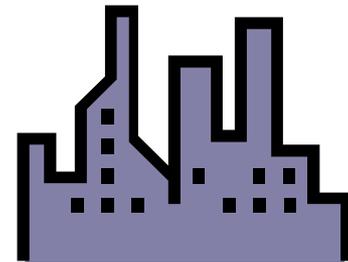
Types of Incremental Analysis

- Accept an order at a special price
- Make or buy
- Sell products or process further
- Retain or replace equipment
- Eliminate an unprofitable business segment
- Allocate limited resources



Accept an Order at a Special Price

- Obtain additional business by making a major price concession to a specific customer
- Assumes that sales of products in other markets are not affected by special order
- Assumes that company is not operating at full capacity



Accept an Order at a Special Price

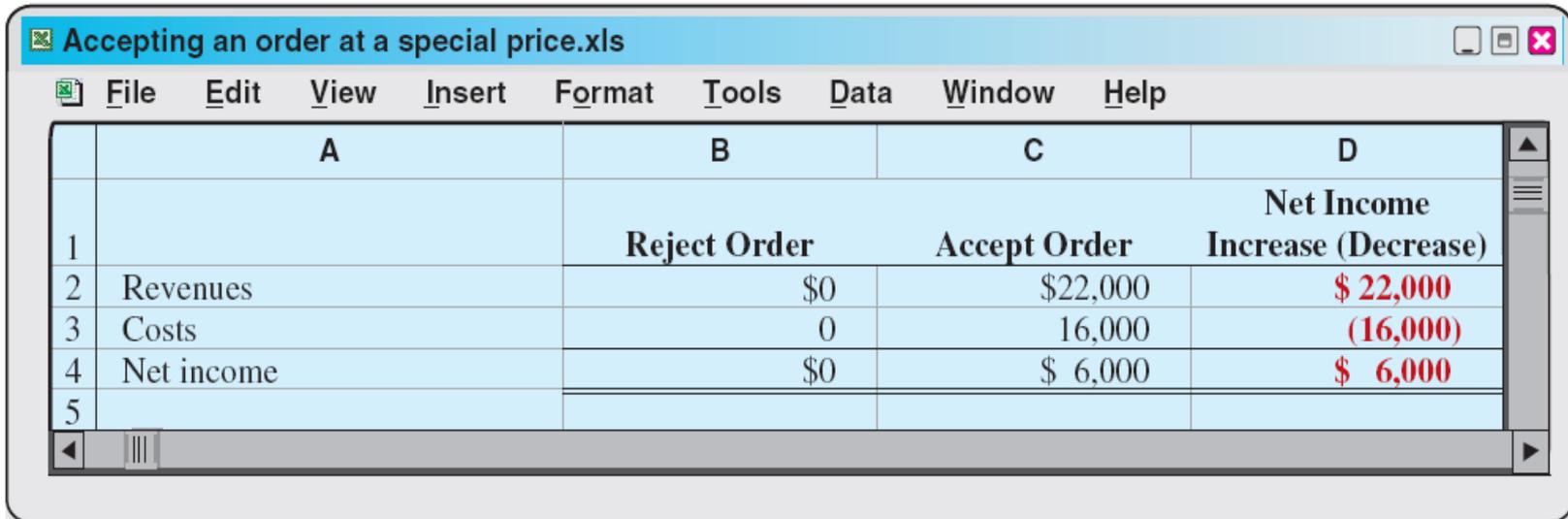
Example

- Customer offers to buy a special order of 2,000 units at \$11 per unit
 - No effect on normal sales
 - No effect on plant capacity; currently operating at 80% which is 100,000 units
 - Current variable manufacturing cost = \$8 per unit
 - Current fixed manufacturing costs = \$400,000 or \$4 per unit
 - Normal selling price = \$20 per unit
- Based strictly on total cost of \$12 per unit ($\$8 + \4), **reject** offer as cost exceeds selling price of \$11

Accept an Order at a Special Price

Example - Continued

- Fixed costs do not change since within existing capacity - thus *fixed costs are not relevant*
- Variable manufacturing costs and expected revenues change - thus *both are relevant to the decision*



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
		Reject Order	Accept Order	Net Income Increase (Decrease)
1				
2	Revenues	\$0	\$22,000	\$ 22,000
3	Costs	0	16,000	(16,000)
4	Net income	\$0	\$ 6,000	\$ 6,000
5				

Decision: Accept the offer; Income increases by \$6,000

Make or Buy

Must decide whether to make the component parts or to buy them from others

Example:

The following costs are incurred to **make** 25,000 switches:

Direct materials	\$ 50,000
Direct labor	75,000
Variable manufacturing overhead	40,000
Fixed manufacturing overhead	<u>60,000</u>
Total manufacturing costs	<u>\$225,000</u>
Total cost per unit (\$225,000 ÷ 25,000)	<u>\$9.00</u>

Alternatively, the switches can be **purchased** for \$8 per switch (\$200,000)

Eliminates all variable costs of making switches

Eliminates \$10,000 of fixed costs; however, \$50,000 remain

Make or Buy

Example - Continued

- Total manufacturing cost is \$1 higher than purchase price
- Must absorb at least \$50,000 of fixed costs under either option

	A	B	C	D
1		Make	Buy	Net Income Increase (Decrease)
2	Direct materials	\$ 50,000	\$ 0	\$ 50,000
3	Direct labor	75,000	0	75,000
4	Variable manufacturing costs	40,000	0	40,000
5	Fixed manufacturing costs	60,000	50,000	10,000
6	Purchase price (25,000 × \$8)	0	200,000	(200,000)
7	Total annual cost	\$225,000	\$250,000	\$ (25,000)
8				

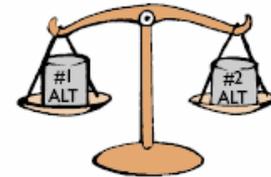
Decision: Continue to make switches as purchasing adds \$25,000 to cost

Make or Buy

Opportunity Cost

the *potential benefit* that may be obtained from following an alternative course of action

must be considered in incremental analysis



Make or Buy

Example - Continued

- Assume that buying the switches allows the company to use the released capacity to earned \$28,000 in additional income
- The \$28,000 lost income is an additional cost of making the switches - *an opportunity cost*

	A	B	C	D
1		Make	Buy	Net Income Increase (Decrease)
2	Total annual cost	\$225,000	\$250,000	\$(25,000)
3	Opportunity cost	28,000	0	28,000
4	Total cost	\$253,000	\$250,000	\$ 3,000
5				

Decision: Buy the switches as company is \$3,000 better off

Let's Review

In a make-or-buy decision, relevant costs are:

- a. Manufacturing costs that will be saved.
- b. The purchase price of the units.
- c. Opportunity costs.
- d. All of the above.

Sell or Process Further

- May have option to sell product at a given point in production or to process further and sell at a higher price

- *Decision Rule:*

Process further as long as the incremental revenue from such processing exceeds the incremental processing costs

Sell or Process Further

Example:

- Costs to manufacture one unfinished table:

Direct materials	\$ 15
Direct labor	\$ 10
Variable manufacturing overhead	\$ 6
Fixed manufacturing overhead	\$ <u>4</u>
Manufacturing cost per unit	\$35

- Selling price of unfinished unit is \$50
- Used capacity used to finish tables to sell for \$60 per table
- Relevant unit costs of finishing table:
 - Direct materials increase \$2
 - Direct labor increase \$4
 - Variable overhead increase \$2.40 (60% of direct labor)
 - No change in fixed overhead

Sell or Process Further

Example - Continued

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1		Sell	Process Further	Net Income Increase (Decrease)
2	Sales per unit	\$50.00	\$60.00	\$10.00
3	Cost per unit			
4	Direct materials	15.00	17.00	(2.00)
5	Direct labor	10.00	14.00	(4.00)
6	Variable manufacturing overhead	6.00	8.40	(2.40)
7	Fixed manufacturing overhead	4.00	4.00	0.00
8	Total	35.00	43.40	(8.40)
9	Net income per unit	\$15.00	\$16.60	\$ 1.60
10				

Decision: Process further

Incremental revenue (\$10) exceeds incremental processing costs (\$8.40); income increases \$1.60 per unit

Retain or Replace Equipment

Example:

- Assessment of replacement of factory machine:

	<u>Old Machine</u>	<u>New Machine</u>
Book Value	\$ 40,000	
Cost		\$ 120,000
Remaining useful life	four years	four years
Salvage value	-0-	-0-

- Variable manufacturing costs decrease from \$160,000 to \$125,000 if new machine purchased

Retain or Replace Equipment

Example - Continued

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F
1		Retain Equipment		Replace Equipment		Net Income Increase (Decrease)
2	Variable manufacturing costs	\$640,000	^a	\$500,000	^b	\$140,000
3	New machine cost			120,000		(120,000)
4	Total	\$640,000		\$620,000		\$ 20,000
5						
6	^a (4 years × \$160,000)					
7	^b (4 years × \$125,000)					
8						

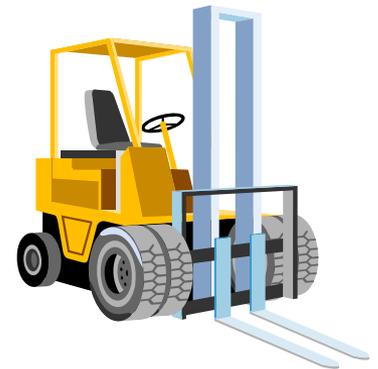
Decision: Replace the Equipment

The lower variable costs due to replacement more than offset the cost of the new equipment

Retain or Replace Equipment

Additional Considerations

- The book value of old machine does not affect the decision.
 - ◆ Book value is a sunk cost.
 - ◆ Costs which cannot be changed by future decisions (sunk cost) are not relevant in incremental analysis.
- However, any trade-in allowance or cash disposal value of the existing asset is relevant.



Let's Review

The decision rule in a sell-or-process-further decision is:

Process further as long as the incremental revenue from processing exceeds:

- a. Incremental processing costs.
- b. Variable processing costs.
- c. Fixed processing costs.
- d. No correct answer is given.

Eliminate an Unprofitable Segment

- Key: *Focus on Relevant Costs*
- Consider effect on related product lines
- Fixed costs allocated to the unprofitable segment *must be absorbed* by the other segments
- Net income may *decrease* when an unprofitable segment is eliminated
- Decision Rule:

Retain the segment unless fixed costs eliminated exceed contribution margin lost

Eliminate an Unprofitable Segment

Example:

- Martina Company manufactures three models of tennis rackets:
 - ◆ Profitable lines: Pro and Master
 - ◆ Unprofitable line: Champ
- Condensed Income Statement data:

	<u>Pro</u>	<u>Master</u>	<u>Champ</u>	<u>Total</u>
Sales	\$800,000	\$300,000	\$100,000	\$1,200,000
Variable expenses	<u>520,000</u>	<u>210,000</u>	<u>90,000</u>	<u>820,000</u>
Contribution margin	280,000	90,000	10,000	380,000
Fixed expenses	<u>80,000</u>	<u>50,000</u>	<u>30,000</u>	<u>160,000</u>
Net income	<u><u>\$200,000</u></u>	<u><u>\$ 40,000</u></u>	<u><u>\$(20,000)</u></u>	<u><u>\$ 220,000</u></u>

Should Champ be eliminated?

Eliminate an Unprofitable Segment

Example - Continued

- If Champ is eliminated, allocate its \$30,000 fixed costs:
2/3 to Pro and 1/3 to Master
- Revised Income Statement data:

	<u>Pro</u>	<u>Master</u>	<u>Total</u>
Sales	\$800,000	\$300,000	\$1,100,000
Variable expenses	<u>520,000</u>	<u>210,000</u>	<u>730,000</u>
Contribution margin	280,000	90,000	370,000
Fixed expenses	<u>100,000</u>	<u>60,000</u>	<u>160,000</u>
Net income	<u>\$180,000</u>	<u>\$ 30,000</u>	<u>\$ 210,000</u>

- Total income has *decreased* by \$10,000

Eliminate an Unprofitable Segment

Example - Continued

- Incremental analysis of Champ provided the same results: **Do Not Eliminate Champ**

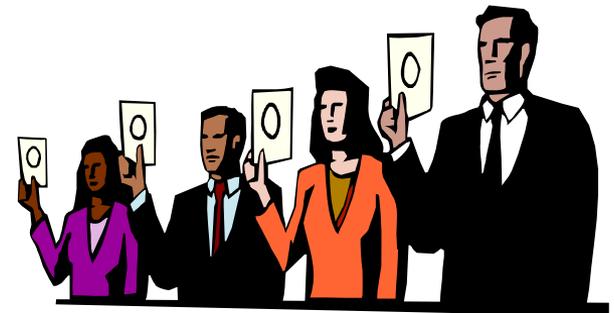
	A	B	C	D
		Continue	Eliminate	Net Income Increase (Decrease)
1				
2	Sales	\$100,000	\$ 0	\$(100,000)
3	Variable costs	90,000	0	90,000
4	Contribution margin	10,000	0	(10,000)
5	Fixed costs	30,000	30,000	0
6	Net income	\$(20,000)	\$(30,000)	\$ (10,000)
7				

- Decrease in net income is due to Champ's contribution margin (\$10,000) that **will not** be realized if the segment is discontinued.

Allocate Limited Resources

- **Resources are always limited**

- ◆ Floor space for a retail firm
- ◆ Raw materials, direct labor hours, or machine capacity for a manufacturing firm



- Management must decide *which products to make and sell to maximize net income*

Allocate Limited Resources

Example:

- Collins Company manufactures deluxe and standard pen and pencil sets
- Limiting resource: 3,600 machine hours per month



	<u>Deluxe Sets</u>	<u>Standard Sets</u>
Contribution margin per unit	\$8	\$6
Machine hours required	0.4	0.2

- Deluxe set has higher contribution margin: \$8
- Standard set takes fewer machine hours per unit

Allocate Limited Resources

Example: - Continued

- Must compute *contribution margin per unit of limited resource*

	<u>Deluxe Sets</u>	<u>Standard Sets</u>
Contribution margin per unit (a)	\$8	\$6
Machine hours required (b)	0.4	0.2
Contribution margin per unit of limited resource [(a) ÷ (b)]	\$20	\$30

- Standard sets have higher contribution margin per unit of limited resources

Decision: *Shift sales mix to standard sets or increase machine capacity*

Allocate Limited Resources

Example: - Continued

- Alternative: Increase machine capacity from 3,600 to 4,200 machine hours

	<u>Produce Deluxe Sets</u>	<u>Produce Standard Sets</u>
Machine hours (a)	600	600
Contribution margin per unit of limited resource (b)	\$20	\$30
Contribution margin [(a) × (b)]	<u><u>\$12,000</u></u>	<u><u>\$18,000</u></u>

- To maximize net income, all the additional 600 hours should be used to produce standard sets

Let's Review

If an unprofitable segment is eliminated:

- a. Net income will always increase.
- b. Variable expenses of the eliminated segment will have to be absorbed by other segments.
- c. Fixed expenses allocated to the eliminated segment will have to be absorbed by other segments.
- d. Net income will always decrease.

Capital Budgeting

- The process of making capital expenditure decisions in business is known as

Capital Budgeting

- The amount of possible capital expenditures usually exceeds the funds available for such expenditures
- Capital budgeting involves choosing among various capital projects to find the one(s) that will

Maximize a company's return on investment

Evaluation Process

- Many companies follow a carefully prescribed process in capital budgeting.
- At least once a year:
 - ◆ Proposals are requested from each department
 - ◆ The capital budgeting committee screens the proposals and submits its findings to the officers of the company
 - ◆ Officers select projects and submit list to the board of directors for approval



Evaluation Process

- Providing management with relevant data for capital budgeting decisions requires familiarity with quantitative techniques.
- The most common techniques are:

Annual Rate of Return

Cash Payback

Discounted Cash Flow



Evaluation Process

- These techniques will be illustrated using the following data for Tappan Company:
 - ◆ Investment in new equipment: \$130,000
 - ◆ Useful life of new equipment: 10 years
 - ◆ Zero salvage and straight-line depreciation
 - ◆ The expected annual revenues and costs of the new product that will be produced from the investment are:

Sales		\$200,000
Less: Costs and expenses		
Manufacturing costs (exclusive of depreciation)	\$145,000	
Depreciation expenses ($\$130,000 \div 10$)	13,000	
Selling and administrative expenses	22,000	180,000
		<hr/>
Income before income taxes		20,000
Income tax expense		7,000
		<hr/>
Net income		<u>\$ 13,000</u>

Annual Rate of Return

- The annual rate of return technique is based directly on accounting data
- It indicates the profitability of a capital expenditure
- The formula is:

$$\frac{\text{Expected Annual Net Income}}{\text{Average Investment}} = \text{Annual Rate of Return}$$

- The expected annual net income is from the projected Income Statement

Annual Rate of Return

- The average investment is derived from the following formula:

$$\text{Average Investment} = \frac{\text{Original Investment} + \text{Value at End of Useful Life}}{2}$$

- For Tappan Company the average investment is:

$$[(\$130,00 + \$0) \div 2] = \$65,000$$

Annual Rate of Return

- The expected rate of return for Tappan Company's investment in new equipment is:

$$\text{\$13,000} \div \text{\$65,000} = 20\%$$

- The decision rule is:

A project is acceptable if its rate of return is greater than management's minimum rate of return. When choosing among several acceptable projects, the project with the higher rate of return is generally more attractive.

Annual Rate of Return

- Principal advantages of the annual rate of return technique:
 - ◆ Simplicity of calculations
 - ◆ Management's familiarity with accounting terms used in the calculation
- Major limitation of the technique:
It does not consider the time value of money
- As noted in Appendix C, recognition of the time value of money can make a significant difference between the present and future values of an investment.

Cash Payback

- Identifies the time period required to recover the cost of the investment
- Uses the net annual cash flow produced from the investment
- Net annual cash flow can be approximated by taking net income and adding back depreciation
- The formula for computing the cash payback period is:

$$\text{Cost of Capital Investment} \div \text{Net Annual Cash Flow} = \text{Cash Payback Period}$$

Cash Payback

Example:

- Tappan Company has net annual cash inflows of \$26,000 (Net Income \$13,000 + Depreciation \$13,000)
- The cash payback period is:

$$\text{\$130,000} \div \text{\$26,000} = 5 \text{ years}$$

Cash Payback

Example:

- Assume Tappan Company has uneven net annual cash inflows
- Now the cash payback period is determined when the cumulative net cash flows equal the cost of the investment

<u>Year</u>	<u>Investment</u>	<u>Net Annual Cash Flow</u>	<u>Cumulative Net Cash Flow</u>
0	\$300,000		
1		\$ 60,000	\$ 60,000
2		90,000	150,000
3		90,000	240,000
4		120,000	360,000
5		100,000	460,000

Cash payback period = **3.5 years**

Let's Review

Which of the following is **incorrect** about the annual rate of return technique:

- a. The calculation is simple.
- b. The accounting terms used are familiar to management.
- c. The timing of the cash inflows is not considered.
- d** The time value of money is considered.

Discounted Cash Flow

- Discounted cash flow techniques generally recognized as best approach to making capital budgeting decisions
- Techniques consider both:
 - ◆ Estimated total cash inflows, and
 - ◆ The time value of money
- Two methods generally used with the discounted cash flow techniques are

Net Present Value Method

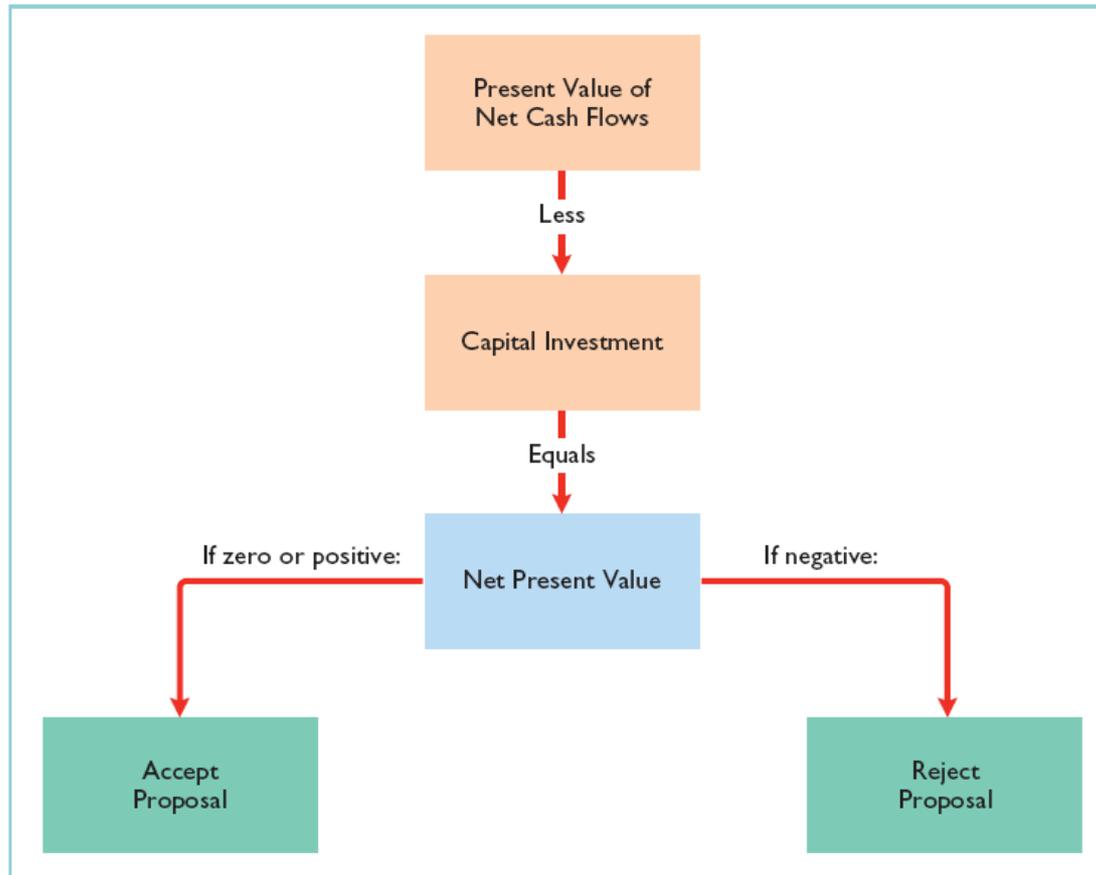
Internal Rate of Return Method

Net Present Value Method

- NPV method compares the **present value of the cash inflows** to the **capital outlay** required by the investment
- The **difference** between the two amounts is referred to as the **net present value**
- The interest rate used to discount the cash flow is the required minimum rate of return
- A proposal is acceptable when the **NPV is zero or positive**
- The higher the positive NPV, the more attractive the investment

Net Present Value Method

Net Present Value Decision Criteria



Net Present Value Method

Example: Equal Annual Cash Flows

- Annual cash flows of \$26,000 uniform over asset's useful life
- Calculation of present value of annual cash flows (annuity) at 2 different discount rates:

	Present Values at Different Discount Rates	
	12%	15%
Discount factor for 10 periods	<u>5.65022</u>	<u>5.01877</u>
Present value of net annual cash flows:		
\$26,000 × 5.65022	<u>\$146,906</u>	
\$26,000 × 5.01877		<u>\$130,488</u>

Net Present Value Method

Example: Equal Annual Cash Flows - Continued

- Analysis of proposal using net present values

	12%	15%
Present value of net annual cash flows	\$146,906	\$130,488
Capital investment	130,000	130,000
Positive (negative) net present value	\$ 16,906	\$ 488

- **NPV positive** for both discount rates
- **Accept** proposed capital expenditure at either discount rate

Net Present Value Method

Example: Unequal Annual Cash Flows

- Different cash flows each year over asset's useful life; calculation of PV of annual cash flows at 2 different discount rates:

Year	Assumed Net Annual Cash Flows	Discount Factor		Present Value	
		12%	15%	12%	15%
	(1)	(2)	(3)	(1) × (2)	(1) × (3)
1	\$ 36,000	.89286	.86957	\$ 32,143	\$ 31,305
2	32,000	.79719	.75614	25,510	24,196
3	29,000	.71178	.65752	20,642	19,068
4	27,000	.63552	.57175	17,159	15,437
5	26,000	.56743	.49718	14,753	12,927
6	24,000	.50663	.43233	12,159	10,376
7	23,000	.45235	.37594	10,404	8,647
8	22,000	.40388	.32690	8,885	7,192
9	21,000	.36061	.28426	7,573	5,969
10	20,000	.32197	.24719	6,439	4,944
	\$260,000			\$155,667	\$140,061

Net Present Value Method

Example: Unequal Annual Cash Flows - Continued

- Analysis of proposal using net present values

	<u>12%</u>	<u>15%</u>
Present value of net annual cash flows	\$155,667	\$140,061
Capital investment	<u>130,000</u>	<u>130,000</u>
Positive (negative) net present value	<u>\$ 25,667</u>	<u>\$ 10,061</u>

- **NPV positive** for both discount rates
- **Accept** proposed capital expenditure at either discount rate

Internal Rate of Return Method

- IRR method finds the interest yield of the potential investment
- IRR - rate that will cause the PV of the proposed capital expenditure to *equal* the PV of the expected annual cash inflows
- Two steps in method
 1. Compute the interval rate of return factor
 2. Use the factor and the PV of an annuity of 1 table to find the IRR.

Net Present Value Method

Example:

- **Step 1:** The formula for computing the IRR factor:

$$\text{Capital Investment} \div \text{Net Annual Cash Flows} = \text{Internal Rate of Return Factor}$$

- IRR factor for Tappan Company, assuming equal annual cash inflows:

$$\mathbf{\$130,000 \div \$26,000 = 5.0}$$

Net Present Value Method

Example - Continued

- **Step 2:** IRR is the discount factor closest to the IRR factor for the time period covered by the annual cash flows.

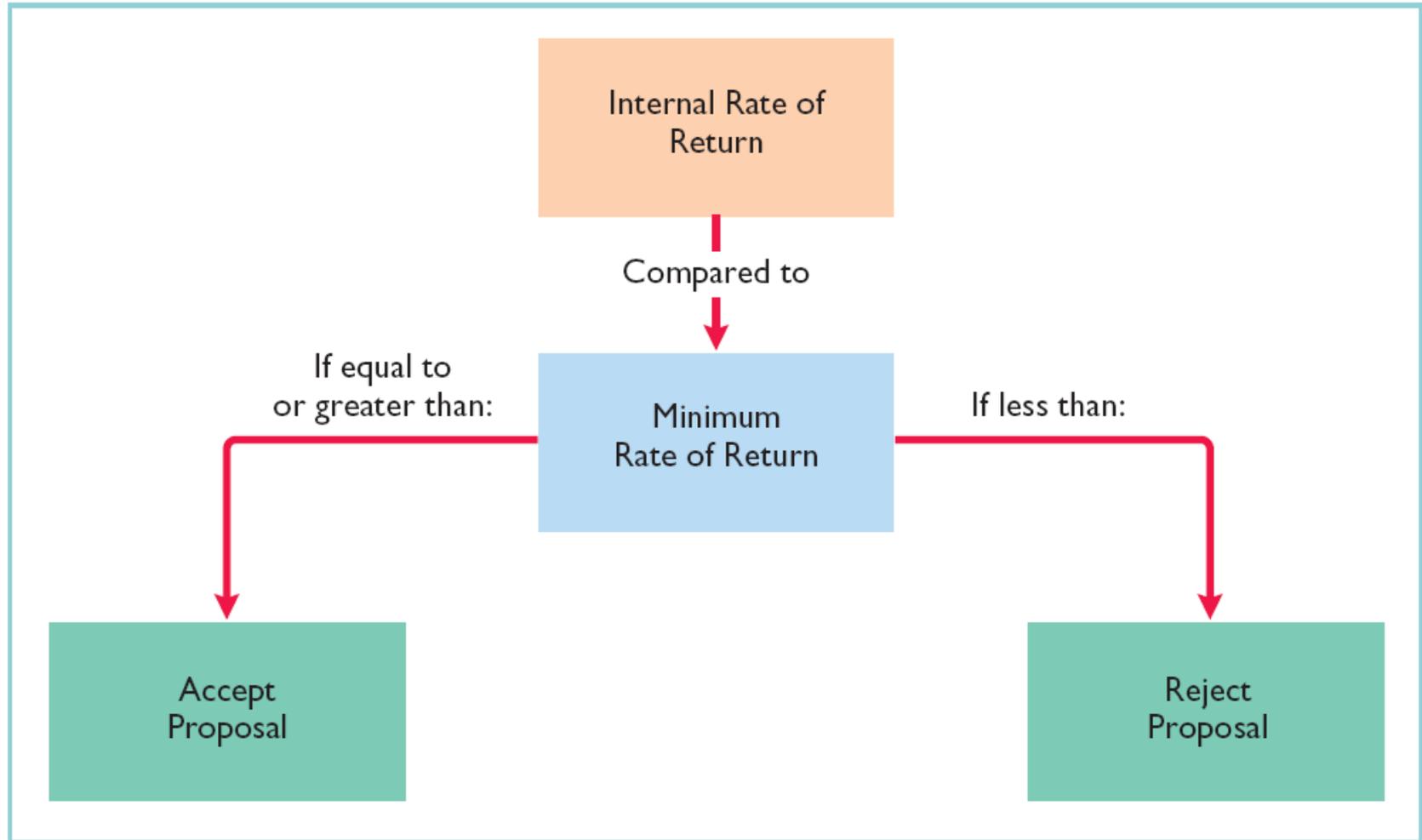
(n) Periods	5%	6%	8%	9%	10%	11%	12%	15%
10	7.72173	7.36009	6.71008	6.41766	6.14457	5.88923	5.65022	5.01877

- Closest discount factor to 5.0 is 5.01877; thus IRR is approximately 15%

Internal Rate of Return Method

- Compare IRR to management's required minimum rate of return
- **Decision Rule:**
 - Accept the project when the IRR is equal to or greater than the required rate of return.
- Assuming a minimum rate of return for Tappan of 10%, project is accepted since IRR of 15% is greater than the required rate.

Internal Rate of Return Method



Comparison of Discounted Cash Flow Methods

Item	Net Present Value	Internal Rate of Return
1. Objective	Compute net present value (a dollar amount).	Compute internal rate of return (a percentage).
2. Decision rule	If net present value is zero or positive, accept the proposal. If net present value is negative, reject the proposal.	If internal rate of return is equal to or greater than the minimum required rate of return, accept the proposal. If internal rate of return is less than the minimum rate, reject the proposal.

Let's Review

A positive net present value means that the:

- a. Project's rate of return is less than the cutoff rate.
- b.** Project's rate of return exceeds the required rate of return.
- c. Project's rate of return equals the required rate of return.
- d. Project is unacceptable.

Chapter Review - Brief Exercise 26-9

Adler Company is considering purchasing new equipment for \$400,000. It is expected that the equipment will produce annual net income of \$10,000 over its 10-year useful life. Annual depreciation will be \$40,000.

Compute the payback period.

Chapter Review - Brief Exercise 26-9

First, calculate net annual cash inflows:

Net income + depreciation

$$\text{\$10,000} + \text{\$40,000} = \text{\$50,000}$$

Second, divide capital investment by annual cash flows

$$\text{\$400,000} \div \text{\$50,000} = 8 \text{ years}$$

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