WELCOME

BASIC PRINCIPLES AND CONCEPTS

ACCOUNTING DEFINED

The process of identifying measuring, and communicating economic information to permit informed judgments and decisions by users of the information

ACCOUNTING

- Language of business
- Is a service activity. It's function is to provide quantitative information, primarily financial in nature, about economic entities that is intended to be useful in making economic decision.

ACCOUNTING SYSTEMS

Objectives of an accounting system:

- To process the information efficiently-at low cost
- To obtain reports quickly
- To ensure a high degree of accuracy
- To minimize the possibility of the theft and fraud

ACCOUNTING CYCLE

1. Analyze transaction
2. Journalize original entries
3. Post journal entries to ledger
4. Identify, journalize and post adjusting entries
5. Journalize and post closing entries
6. Prepare financial statements

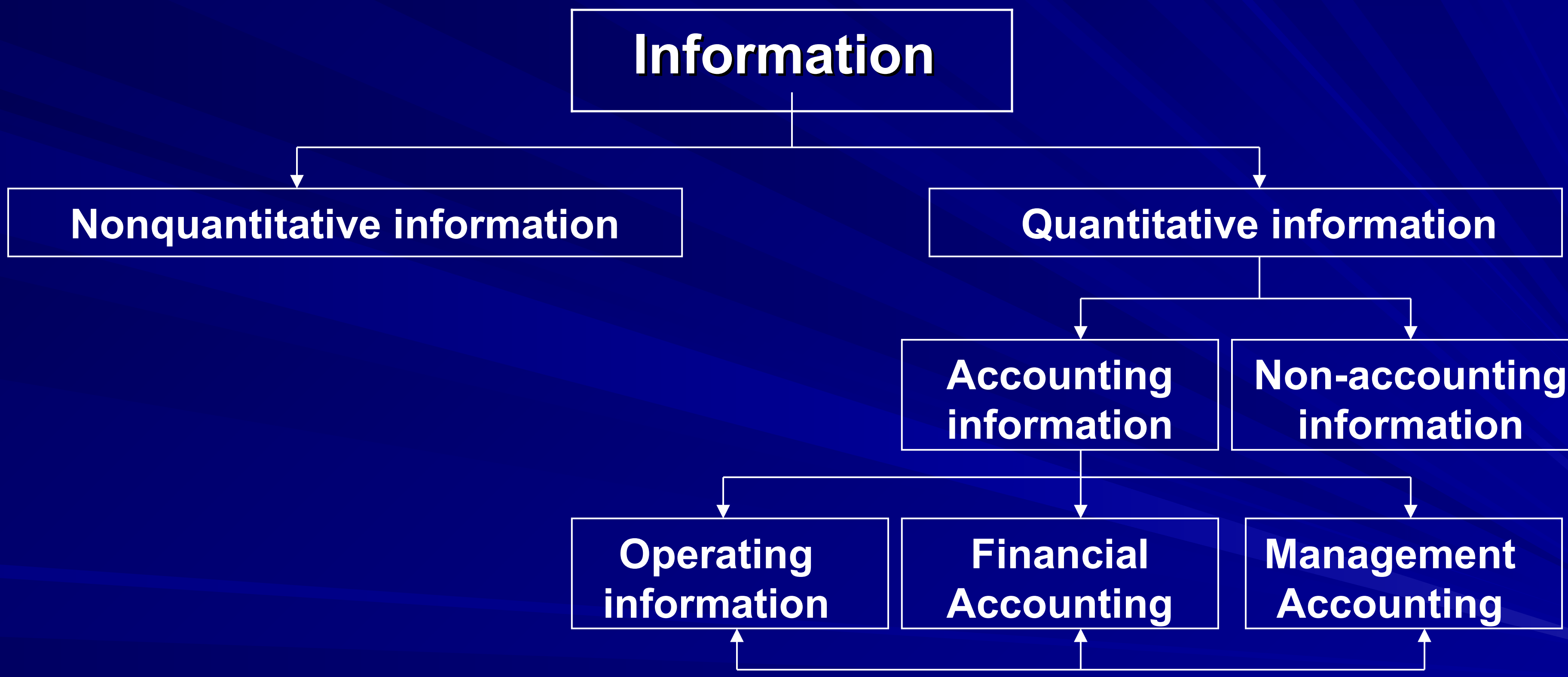
BRANCHES OF ACCOUNTING

- **Financial accounting-** information gathered is intended both for internal (e.g. managers) and external (e.g. banks and other creditors, government agencies, investment advisers, etc.) parties. Information recording is subject to certain ground rules internationally known as Generally Accepted Accounting Principles (GAAP).

BRANCHES OF ACCOUNTING

- **Management accounting-** information gathered is primarily for the use of internal management. Such information is used for management planning and control.

THE NEED OF INFORMATION



THREE CATEGORIES OF ACCOUNTING INFORMATION

1. Operating Information
2. Financial Information
3. Management Information

- ## OPERATING INFORMATION

  Constitutes the largest quantity of accounting information; it provides the basic data for both managerial and financial accounting.

- ## FINANCIAL ACCOUNTING

  Information intended for managers and by external parties, including shareholders, banks and other creditors, government agencies, investment advisers and the general public.

➢ MANAGEMENT ACCOUNTING

Used internally for planning, implementation and control. This accounting information is prepared to aids mangers.

THREE MANAGEMENT FUNCTION

1. Planning
2. Implementation
3. Control

USERS OF INFORMATION

- Owners
- Management
- Creditors
- Government
- Prospective owners and prospective creditors
- Employees
- Public

PLANNING

- The process of deciding what action should be taken for the future

- Budgeting is one important factor of planning, wherein it is the process of planning overall activities of the organization for the specified period of time.

IMPLEMENTATION

- Putting approved plans into action.

CONTROL

- The process used to assure that the employees performs properly.

- Accounting information is used in the control process as am mean of communication, motivation, attention getting and appraisal.

Communication - when accounting report can assist in informing employees about management plan

Motivation - it can induce members of the organization to act in accordance with company's goal and objectives.

Attention getting - it signals that the problems ay exist and requires investigation.

Appraisal - basis for salary increase, promotion or dismissal

ACCOUNTING PRINCIPLE

Established by human, ‘a general law or rule adopted or professed as a guide to action; a settled ground or basis of conduct and practice.

THREE CRITERIA OF ACCEPTANCE FOR PRINCIPLES

Relevance - when its result in information that is meaningful and useful to those who need to know something about the organization.

Objectivity - when the information is not influenced by personal bias or judgment of those who furnish it.

Feasibility - that it can be implemented without undue complexity or cost.

BASIC PRINCIPLES AND CONCEPTS

- Accounting principles are built on a foundation of some basic concepts
- Accounting foundation consists of a set called Generally Accepted Accounting Principles (GAAP)
- Concepts widely accepted and applied in practice

FINANCIAL ACCOUNTING

- Governed by Generally Accepted Accounting Principles (GAAP)
- Strike a balance between the criterion of relevance and the criteria of objectivity and feasibility.

NATURE AND PURPOSE OF ACCOUNTING

3 Types of Accounting Information

- Operating Information
- Management Accounting Information
- Financial Accounting Information

OBJECTIVES OF ACCOUNTING SYSTEMS

1. To process the information efficiently-at low cost
2. To obtain reports quickly
3. To ensure a high degree of accuracy
4. To minimize the possibility of theft or fraud

SIGNIFICANT RECORDKEEPING IDEAS

- IDEA OF DEBIT AND CREDIT EQUALITY
  - ✓ Every debit must have an equal and corresponding credit
- IDEA OF BALANCING
  - ✓ One total should always equal some other total

DEBIT AND CREDIT

Assets		=	Liabilities		+	Owner's equity	
Dr	Cr		Dr	Cr		Dr	Cr
+	-		+	-		+	-

ACCOUNTING CONCEPTS

1. **Money measurement**
2. **Entity**
3. **Going-concern**
4. **Cost**
5. **Dual aspects**
6. **Accounting period**
7. **Conservatism**
8. **Realization**
9. **Matching**
10. **Consistency**
11. **Materiality**

Assets = Liabilities + Owners equity

Dr	Cr	Dr	Cr	Dr	Cr
+	-	+	-	+	-

BASIC ACCOUNTING CONCEPTS

1. Money Measurement- An accounting record is made only of information that can be expressed in monetary terms.
2. The Entity Concept- The owners of the business are considered separate and distinct from the business itself. Hence, accounts are kept for the entity as distinguished from the persons associated with the entity.
3. The Going-Concern Concepts- unless there is good evidence to the contrary, it is assumed that the business will operate indefinitely.
4. The Cost Concept- The economic resources of an entity are called assets. An asset is ordinarily entered in the accounting records at the price paid to acquire it- that is, at its cost.

BASIC ACCOUNTING CONCEPTS

5. The Dual-Aspect Concept- Assets= Liabilities+ Owner's Equity
6. Accounting Period- Accounting measures activities for a special time interval, usually one (1) specified.
7. Conservatism- revenues are recognized only when they are reasonably certain, whereas Expenses are recognized as soon as they are reasonably possible.
8. Realization- Revenues are usually recognized in the period in which goods were delivered to costumers or in which services were rendered. The amount recognized is the amount that costumers are certain to pay.

BASIC ACCOUNTING CONCEPTS

9. Matching- when a given event affects both revenues and expenses, the effect on each should be recognized in the same accounting period.
10. Consistency- Once an entity has decided on a certain accounting method, it should use the same method in all subsequent events of the same character unless it has sound reasons to change methods.
11. Materiality- insignificant events may be disregarded, but there must be full disclosure of all important information.

THREE REPORTS

- BALANCE SHEET
- INCOME STATEMENT
- CASH FLOW STATEMENT

BALANCE SHEET

- Is a report of status as of a moment of time, whereas the other 2 statements summarize flows over a period of time

INCOME STATEMENT

- Income Statement

  - summarizes the results of operations for a period of time.

  - it is a <u>flow report</u> as contrasted with a balance sheet which is a <u>status report</u>.

MAMAGEMENT ACCOUNTING CONTRASTED WITH FINANCIAL ACCOUNTING

	Dimension	Management Accounting	Financial accounting
1)	Necessity	Optional	Required
2)	Purpose	A means to the end of the assisting management	Produce statements for outside users
3)	Users	Relatively small group; known identity	Relatively large group; mostly unknown
4)	Underlying structure	Varies according to use of the information	One basic equation: Asset = Liabilities + Owner's Equity
5)	Source of principles	Whatever is useful to management	GAAP
6)	Time Orientation	Historical and estimates of the future	Historical
7)	Information content	Monetary and nonmonetary	Primarily monetary
8)	Information Precisions	Many approximations	Fewer approximations
9)	Report Frequency	Varies with purpose; monthly & weekly common	Quarterly & annually
10)	Report timeliness	Reports issued promptly after end of period covered	Delay of weeks or even months
11)	Report entity	Responsible center	Overall organization
12)	Liability Potential	Virtually none	Few lawsuits, but threat is always present

SIMILARITIES OF FINANCIAL AND MANAGEMENT ACCOUNTING

1. The same considerations that make generally accepted accounting principles sensible for purpose of financial accounting are likely to be relevant for purpose of management accounting.
2. Operating information is used both in preparing the financial statements and in management accounting.
3. Basic data are collected in accordance with generally accepted financial principles.
4. The financial and management accounting information are both used in decision making.

THANKS YOU

PREPERATION OF FINANCIAL STATEMENTS

While discussing the new provisions under Companies Act 2013 regarding preparation of Financial statements, we will cover :

- Financial statement
- Consolidated Financial Statements

FINANCIAL STATEMENTS

MEANING OF "FINANCIAL STATEMENT" [Sec. 2(40)]

In relation to company, includes:

a) Balance Sheet at the end of financial year.

b) Statement of Profit & Loss for the financial year

c)Cash Flow statement (not mandatory for small companies, OPCs & Dormant companies) for the financial year.

d) Statement of Changes in equity, if applicable

e)Explanatory statement Note annexed to & forming part of Financial statements.

Small Company (Contd..)

This clause shall not apply to –

a. A holding company or subsidiary company

b. A company registered under section 8 (formation for charitable objects)

c. A company or body corporate governed by any special Act.

Requirements of Financial Statement (Sec. 129)

- The FS shall give a true and fair view and comply with the AS & shall be in the form as provided in Schedule III.

- The FS shall be laid in the AGM within six months form the end of the financial year.
- The holding company shall in addition, prepare a Consolidated Financial Statement of the Company along with its all subsidiaries, associates & joint ventures and lay before the AGM.

GENERAL INSTRUCTIONS FOR PREPARATION OF BALANCE SHEET

1. Compliance with the requirements of the Act including Accounting Standards

2. Disclosure requirements specified in this Schedule are addition to and not in substitution of the disclosure requirements specified in the Accounting Standards

3. Notes to accounts shall contain information in addition to that presented in the Financial Statements AND shall be cross-referenced.

4. The terms used herein shall be as per the applicable Accounting Standards.

Depending upon the turnover of the company, the figures appearing in the Financial Statements may be rounded off as given below:—

Turnover	Rounding off
> 100 Crore Rs	To the nearest hundreds, thousands, lakhs or millions, or decimals thereof.
=/< 100 Crore Rs	To the nearest lakhs, millions or crores, or decimals thereof.

BALANCE SHEET

PART I — BALANCE SHEET

Name of the Company…………………….

Balance Sheet as at ………………………

(Rupees in…………)

Particulars	Note No.	Figures as at the end of current reporting period	Figures as at the end of the previous reporting period
1	2	3	4

I. EQUITY AND LIABILITIES

(1) **Shareholders' funds**

(*a*) Share capital

(*b*) Reserves and surplus

(*c*) Money received against share warrants

(2) **Share application money pending allotment**

(3) **Non-current liabilities**

(*a*) Long-term borrowings
(*b*) Deferred tax liabilities (Net)
(*c*) Other Long term liabilities
(*d*) Long-term provisions

(4) **Current liabilities**

(*a*) Short-term borrowings
(*b*) Trade payables
(*c*) Other current liabilities
(*d*) Short-term provisions

TOTAL

II. ASSETS

(1) **Non-current assets**

(*a*) Fixed assets

(*i*) Tangible assets

(*ii*) Intangible assets

(*iii*) Capital work-in-progress

(*iv*) Intangible assets under development

(*b*) Non-current Investments

(*c*) Deferred tax assets (net)

(*d*) Long-term loans and advances

(*e*) Other non-current assets

(2) **Current assets**

(*a*) Current INVESTMENTS

(*b*) Inventories

(*c*) Trade receivables

(*d*) Cash and cash equivalents

(*e*) Short-term loans and advances

(*f*) Other current assets

TOTAL

GENERAL INSTRUCTIONS FOR PREPARATION OF BALANCE SHEET

- An asset shall be classified as current when it satisfies any of the following criteria:—

  (*a*) it is expected to be realised in, or is intended for sale or consumption in, the company's normal operating cycle;

  (*b*) it is held primarily for the purpose of being traded;

  (*c*) it is expected to be realised within twelve months after the reporting date; or

  (*d*) it is cash or cash equivalent unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.
- All other assets shall be classified as non-current.

• An operating cycle is the time between the acquisition of assets for processing and their realisation in cash or cash equivalents. Where the normal operating cycle cannot be identified, it is assumed to have a duration of twelve months.

• A liability shall be classified as current when it satisfies any of the following criteria:—

(*a*) it is expected to be settled in the company's normal operating cycle;

(*b*) it is held primarily for the purpose of being traded;

(*c*) it is due to be settled within twelve months after the reporting date;or

(*d*) the company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.

•All other liabilities shall be classified as non-current.

•A receivable shall be classified as a “trade receivable” if it is in respect of the amount due on account of goods sold or services rendered in the normal course of business.

•A payable shall be classified as a “trade payable” if it is in respect of the amount due on account of goods purchased or services received in the normal course of business.

•A company shall disclose the following in the notes to accounts.

NOTES TO ACCOUNTS:

A. Share Capital

For each class of share capital (different classes of preference shares to be treated separately).

- The no. and amount of shares along with the par value.
- Right shares
- Shares holded as holding of subsidiary, associate or a Joint Venture.
- Shares issued other than cash consideration.
- Securities convertible in shares, with date of conversion.
- Calls unpaid.
- Forfeited shares

B. Reserves and Surplus

Reserves and Surplus shall be classified as:

(*a*) Capital Reserves;

(*b*) Capital Redemption Reserve;

(*c*) Securities Premium Reserve;

(*d*) Debenture Redemption Reserve;

(*e*) Revaluation Reserve;

(*f*) Share Options Outstanding Account;

(*g*) Other Reserves–(specify the nature and purpose of each reserve and the amount in respect thereof);

(*h*) Surplus *i.e.*, balance in Statement of Profit and Loss disclosing allocations and appropriations such as dividend, bonus shares and transfer to/ from reserves, etc.;

C. Long-Term Borrowings

Long-term borrowings shall be classified as:

(a) Bonds/debentures;

(b) Term loans:

- (A) from banks.
- (B) from other parties.

(c) Deferred payment liabilities;

(d) Deposits;

(e) Loans and advances from related parties;

(f) Long term maturities of finance lease obligations;

(g) Other loans and advances (specify nature).

Borrowings shall further be sub-classified as secured and unsecured. Nature of security shall be specified separately in each case.

D. Other Long-term Liabilities

Other Long-term Liabilities shall be classified as:

(*a*) Trade payables;

(*b*) Others.

E. Long-term provisions

The amounts shall be classified as:

(*a*) Provision for employee benefits;

(*b*) Others (specify nature).

F. Short-term borrowings

Short-term borrowings shall be classified as:

(*a*) Loans repayable on demand;

(A) from banks.

(B) from other parties.

(*b*) Loans and advances from related parties;

(*c*) Deposits;

(*d*) Other loans and advances (specify nature).

G. Other current liabilities

The amounts shall be classified as:

(a) Current maturities of long-term debt;

(b) Current maturities of finance lease obligations;

(c) Interest accrued but not due on borrowings;

(d) Interest accrued and due on borrowings;

(e) Income received in advance;

(f) Unpaid dividends;

(g) Application money received for allotment of securities and due for refund and interest accrued thereon.

(h) Unpaid matured deposits and interest accrued thereon;

(i) Unpaid matured debentures and interest accrued thereon;

(j) Other payables (specify nature).

H. Short-term provisions

The amounts shall be classified as:

(a) Provision for employee benefits.

(b) Others (specify nature).

I. Tangible assets

(i) Classification shall be given as:

- (a) Land;
- (b) Buildings;
- (c) Plant and Equipment;
- (d) Furniture and Fixtures;
- (e) Vehicles;
- (f) Office equipment;
- (g) Others (specify nature).

(ii) Assets under lease shall be separately specified under each class of asset

(*iii*) Where sums have been written-off on a reduction of capital or revaluation of assets

J. Intangible assets

(i) Classification shall be given as:

(a) Goodwill;

(b) Brands /trademarks;

(c) Computer software;

(d) Mastheads and publishing titles;

(e) Mining rights;

(f) Copyrights, and patents and other intellectual property rights, service sand operating rights;

(g) Recipes, formulae, models, designs and prototypes;

(h) Licences and franchise;

(i) Others (specify nature).

(ii) Where sums have been written-off on a reduction of capital or revaluation of assets

K. Non-current Investments

(i) Non-current investments shall be classified as Trade Investments and other Investments

(ii) Investments carried at other than at cost should be separately stated specifying the basis for valuation thereof;

L. Long-term loans and advances

(i) Long-term loans and advances shall be classified as:

(a) Capital Advances;

(b) Security Deposits;

(c) Loans and advances to related parties (giving details thereof);

(d) Other loans and advances (specify nature).

(ii) The above shall also be separately sub-classified as:

(a) Secured, considered good;

(b) Unsecured, considered good;

(c) Doubtful.

(iii) Allowance for bad and doubtful loans and advances shall be disclosed under the relevant heads separately.

(iv) Loans and advances due by directors or other officers of the company

M. Other non-current assets

Other non-current assets shall be classified as:

(i) Long-term Trade Receivables (including trade receivables on deferred credit terms);

(ii) Others (specify nature);

(iii)LONG TERM Trade Receivables, shall be sub-classified as:

(A) Secured, considered good;

(B) Unsecured, considered good;

(C) Doubtful.

(b) Allowance for bad and doubtful debts shall be disclosed under the relevant heads separately.

(c) Debts due by directors or other officers of the company

N. Current Investments

(i)Current Investments

(ii)The following shall also be disclosed:

(a) The basis of valuation of individual Investments;

(b) Aggregate amount of quoted Investments and market value thereof;

(c) Aggregate amount of unquoted Investments;

(d) Aggregate provision made for diminution in value of Investments.

O. Inventories

(i) Inventories shall be classified as:

(a) Raw materials;

(b) Work-in-progress;

(c) Finished goods;

(d) Stock-in-trade (in respect of goods acquired for trading);

(e) Stores and spares;

(f) Loose tools;

(g) Others (specify nature).

(ii) Goods-in-transit shall be disclosed under the relevant sub-head of inventories.

(iii) Mode of valuation shall be stated.

P. Trade Receivables

(i) Aggregate amount of Trade Receivables outstanding for a period exceeding six months from the date they are due for payment should be separately stated.

(ii) Trade receivables shall be sub-classified as:

- (a) Secured, considered good;
- (b) Unsecured, considered good;
- (c) Doubtful.

(iii) Allowance for bad and doubtful debts shall be disclosed under the relevant heads separately.

(iv) Debts due by directors or other officers of the company

Q. Cash and cash equivalents

(i) Cash and cash equivalents shall be classified as:

(a) Balances with banks;

(b) Cheques, drafts on hand;

(c) Cash on hand;

(d) Others (specify nature).

(ii) Earmarked balances with banks

Bank deposits with more than twelve months maturity shall be disclosed separately.

R. Short-term loans and advances

(i) Short-term loans and advances shall be classified as:

(a) Loans and advances to related parties (giving details thereof);

(b) Others (specify nature).

(ii) The above shall also be sub-classified as:

(a) Secured, considered good;

(b) Unsecured, considered good;

(c) Doubtful.

(iii) Allowance for bad and doubtful loans and advances shall be disclosed

S. Other current assets (specify nature)

This is an all-inclusive heading, which incorporates current assets that do not fit into any other asset categories.

T. Contingent liabilities and commitments (to the extent not provided for)

(i) Contingent liabilities shall be classified as:

(a) Claims against the company not acknowledged as debt;

(b) Guarantees;

(c) Other money for which the company is contingently liable.

(ii) Commitments shall be classified as:

(a) Estimated amount of contracts remaining to be executed on capital account and not provided for;

(b) Uncalled liability on shares and other Investments partly paid;

(c) Other commitments (specify nature)

STATEMENT OF PROFIT AND LOSS

Name of the Company……………………
Profit and loss statement for the year ended ………………………
(Rupees in…………)

Particulars	Note No.	Figures as at the end of current reporting period	Figures as at the end of previous reporting period
1	2	3	4
I Revenue from operations			
II Other income			
III Total Revenue (I + II)			
IV Expenses:			
Cost of materials consumed			
Purchases of Stock-in-Trade			
Changes in inventories of finished goods work-in-progress and Stock-in-Trade			
Employee benefits expense Finance costs			
Depreciation and amortization expense			
Other expenses			
Total expenses			

V Profit before exceptional and
extraordinary items and tax (III - IV)
VI Exceptional items
VII Profit before extraordinary items
and tax (V – VI)
VIII Extraordinary items
IX Profit before tax (VII- VIII)
X Tax expense:
(1) Current tax
(2) Deferred tax
XI Profit (Loss) for the period from
continuing operations (VII-VIII)
XII Profit/(loss) from discontinuing operations
XIII Tax expense of discontinuing operations
XIV Profit/(loss) from Discontinuing
operations (after tax) (XII-XIII)
XV Profit (Loss) for the period (XI + XIV)
XVI Earnings per equity share:
(1) Basic
(2) Diluted

GENERAL INSTRUCTIONS FOR PREPARATION OF STATEMENT OF PROFIT AND LOSS

A. In respect of a company other than a Finance company revenue from operations shall disclose separately in the notes revenue from—

(*a*) Sale of products .....

(*b*) Sale of services .....

(*c*) Other operating revenues .....

(*d*) Excise duty (.....)

In respect of a Finance company, revenue from operations shall include revenue from—

(*a*) Interest .....

(b) Other financial services. .....

B. Revenue under each of the above heads shall be disclosed separately by way of notes to accounts to the extent applicable.

C. Finance Costs

Finance costs shall be classified as:

(a) Interest expense;

(b) Other borrowing costs ;

(c) Applicable net gain/loss

(on foreign currency transactions and translation.)

D. Other income

Other income shall be classified as:

(a) Interest Income

(in case of a company other than a Finance company;

(b) Dividend Income;

(c) Net gain/loss on sale of Investments ;

(d) Other non-operating income

(net of expenses directly attributable to such income).

E. Additional Information

A Company shall disclose by way of notes additional information regarding aggregate expenditure and income on the following items:—

(1)(a) Employee Benefits Expense

(i) salaries and wages,

(ii) contribution to provident and other funds

(iii) expense on Employee Stock Option Scheme (ESOP) and Employee Stock Purchase Plan (ESPP)

(iv) staff welfare expenses

(b) Depreciation and amortisation expense;

(c) Any item of income or expenditure which exceeds one per cent. of the revenue from operations or Rs.1,00,000, whichever is higher;

(d) Interest Income;

(e) Interest expense;

(f) Dividend income;

(g) Net gain/loss on sale of investments;

(h) Adjustments to the carrying amount of investments;

(i) Net gain or loss on foreign currency transaction and translation (other than considered as Finance cost);

(j) Payments to the auditor as

(a) auditor;

(b) for taxation matters;

(c) for company law matters;

(d) for management services;

(e) for other services; and

(f) for reimbursement of expenses;

(k) In case of Companies covered under section 135, amount of expenditure incurred on corporate social responsibility activities;

(l) Details of items of exceptional and extraordinary nature;

(m) Prior period items;

Note:— Broad heads shall be decided taking into account the concept of materiality and presentation of true and fair view of financial statements.

CONSOLIDATED FINANCIAL STATEMENTS (CFS)

General Instructions for preparation of CFS

- Where a company is required to prepare CFS, the company will *mutatis mutandis follow the requirements* of this Schedule.
- Profit or Loss attributable to 'minority interest' and to owners of the parent in the statement of profit and loss shall be presented as allocation for the period.
- A company will disclose the list of subsidiaries or associates or joint ventures, which have not been consolidated along with the reasons for non consolidation.

- Under the Companies Act, 2013 where a company has one or more subsidiaries, it shall, in addition to financial statements, prepare consolidated financial statement of the company and laid before the annual general meeting of the company.
- All subsidiaries, associates and joint ventures will be covered under CFS.
- Company shall prepared the Consolidated Financial Statements according to Schedule III of the Companies Act, 2013 which is in line with revised schedule VI.
- All Companies including unlisted and private companies, with subsidiaries will need to prepare CFS.

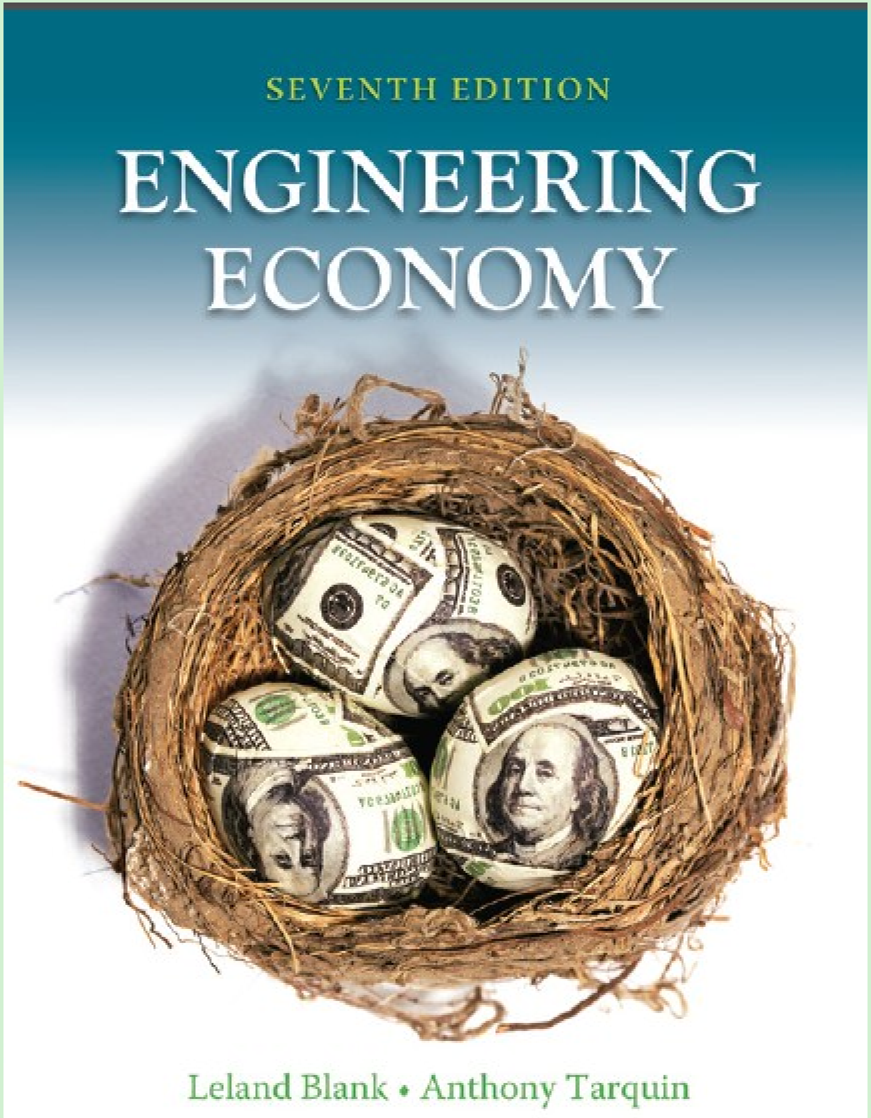
- In addition, the consolidated financial statements shall disclose the information as per the requirements specified in the applicable Accounting Standards including the following:

    (i) Profit or loss attributable to "minority interest" and to owners of the parent in the statement of profit and loss shall be presented as allocation for the period.

    (ii) "Minority interests" in the balance sheet within equity shall be presented separately from the equity of the owners of the parent.

- All subsidiaries, associates and joint ventures (whether Indian or foreign) will be covered under consolidated financial statements.
- An entity shall disclose the list of subsidiaries or associates or joint ventures which have not been consolidated in the consolidated financial statements along with the reasons of not consolidating.

THANK YOU



Chapter 16

Depreciation Methods

Lecture slides to accompany

Engineering Economy

7th edition

Leland Blank

Anthony Tarquin

McGraw Hill Higher Education

LEARNING OUTCOMES

1. Understand basic terms of asset depreciation
2. Apply straight line method of depreciation
3. Apply DB and DDB methods of depreciation; switch between DDB and SL methods
4. Apply MACRS method of depreciation
5. Select asset recovery period for MACRS
6. Explain depletion and apply cost depletion & percentage depletion methods

Depreciation Terminology

Definition: ***Book (noncash) method*** to represent **decrease in value** of a tangible asset over time

Two types: **book depreciation and tax depreciation**

Book depreciation: used for *internal accounting* to track value of assets

Tax depreciation: used to determine *taxes due* based on tax laws

In USA only, **tax depreciation** *must be calculated* ***using MACRS***; **book depreciation** *can be calculated* ***using any method***

Common Depreciation Terms

First cost *P* or unadjusted basis *B*: Total installed cost of asset

Book value BV_t: Remaining undepreciated capital investment in year t

Recovery period *n*: Depreciable life of asset in years

Market value *MV*: Amount realizable if asset were sold on open market

Salvage value *S*: Estimated trade-in or MV at end of asset's useful life

Depreciation rate d_t: Fraction of first cost or basis removed each year t

---

Personal property: Possessions of company used to conduct business

Real property: Real estate and all improvements **(land is not depreciable)**

Half-year convention: Assumes assets are placed in service in midyear

Straight Line Depreciation

➡ **Book value decreases *linearly with time***

$$D_t = \frac{B - S}{n}$$

Where: D_t = annual depreciation charge
t = year
B = first cost or unadjusted basis
S = salvage value
n = recovery period

$$BV_t = B - tD_t$$

Where: BV_t = book value after t years

SL depreciation rate is **constant** for each year: $d = d_t = 1/n$

Example: SL Depreciation

An argon gas processor has a first cost of \$20,000 with a \$5,000 salvage value after 5 years. Find (a) D_3 and (b) BV_3 for year three. (c) Plot book value vs. time.

Solution: (a) $D_3 = (B - S)/n$

$= (20{,}000 - 5{,}000)/5$

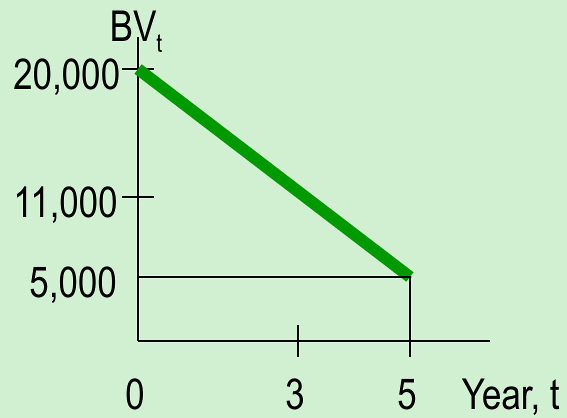
$= \$3{,}000$

(b) $BV_3 = B - tD_t$

$= 20{,}000 - 3(3{,}000)$

$= \$11{,}000$

(c) Plot BV vs. time



Declining Balance (DB) and Double Declining Balance (DDB) Depreciation

- **Determined by multiplying BV at beginning of year *by fixed percentage d***
  - **Max rate for d is twice straight line rate, i.e., $d \leq 2/n$**
  - **Cannot depreciate below salvage value**

Depreciation for year t is obtained by either relation:

$$D_t = dB(1 - d)^{t-1} = dBV_{t-1}$$

Where: D_t = depreciation for year t

d = uniform depreciation rate (2/n for DDB)

B = first cost or unadjusted basis

BV_{t-1} = book value at end of previous year

Book value for year t is given by:

$$BV_t = B(1 - d)^t$$

Example: Double Declining Balance

A depreciable construction truck has a first cost of $20,000 with a $4,000 salvage value after 5 years. Find the (a) depreciation, and (b) book value after 3 years using DDB depreciation.

Solution:

(a) $d = 2/n = 2/5 = 0.4$

$$D_3 = dB(1 - d)^{t-1}$$
$$= 0.4(20{,}000)(1 - 0.40)^{3-1}$$
$$= \$2880$$

(b) $$BV_3 = B(1 - d)^t$$
$$= 20{,}000(1 - 0.4)^3$$
$$= \$4320$$

Spreadsheet Functions for Depreciation

Straight line function: SLN(B,S,n)

Declining balance function: DB(B,S,n,t)

Double declining balance function: DDB(B,S,n,t,d)

Note: It is better to use the DDB function for DB and DDB depreciation. DDB function checks for BV < S and is more accurate than the DB function.

Switching Between Depreciation Methods

- **Switch between methods to maximize PW of depreciation**

$$PW_D = \sum_{t=1}^{t=n} D_t (P/F,i\%,t)$$

- A switch from **DDB to SL in latter part of life** is usually better

- Can switch only one time during recovery period

Procedure to switch from DDB to SL:

1) Each year *t* compute DDB and SL depreciation using the relations

$$D_{DDB} = d(BV_{t-1}) \text{ and } D_{SL} = BV_{t-1} / (n-t+1)$$

2) Select larger depreciation amount, i.e., $D_t = \max[D_{DDB}, D_{SL}]$

3) If required, calculate PW_D

Alternatively, use spreadsheet function **VDB(B,S,n,start_t,end_t)** to determine D_t

Example 16A.3

The Outback Steakhouse main office has purchased a $100,000 Online document imaging system with an estimated useful life of 8 years and a tax depreciation recovery period of 5 years. Compare the present worth of total depreciation for

- (a) the SL method,
- (b) the DDB method,
- (c) DDB-to-SL switching.

Use a rate of i = 15% per year.

TABLE 16A–2 DDB Model Depreciation and Present Worth Computations, Example 16A.3*b*

Year t	D_t, \$	BV_t, \$	$(P/F,15\%,t)$	Present Worth of D_t, \$
0		100,000		
1	40,000	60,000	0.8696	34,784
2	24,000	36,000	0.7561	18,146
3	14,400	21,600	0.6575	9,468
4	8,640	12,960	0.5718	4,940
5	5,184	7,776	0.4972	2,577
Totals	92,224			69,915

TABLE 16A–3 Depreciation and Present Worth for DDB-to-SL Switching, Example 16A.3c

Year t	DDB Method, \$ D_{DDB}	DDB Method, \$ BV_t	SL Method D_{SL}, \$	Larger D_t, \$	P/F Factor	Present Worth of D_t, \$
0	—	100,000				
1	40,000	60,000	20,000	40,000	0.8696	34,784
2	24,000	36,000	15,000	24,000	0.7561	18,146
3	14,400	21,600	12,000	14,400	0.6575	9,468
4*	8,640	12,960	10,800	10,800	0.5718	6,175
5	5,184	7,776	12,960	10,800	0.4972	5,370
Totals	92,224			100,000		73,943

*Indicates year of switch from DDB to SL depreciation.

MACRS Depreciation

Required method to use for **tax depreciation** in **USA only**

Originally developed to offer accelerated depreciation for economic growth

$$D_t = d_t B$$

Where: D_t = depreciation charge for year t
B = first cost or unadjusted basis
d_t = depreciation rate for year t (decimal)

Get value for d_t from IRS table for MACRS rates

$$BV_t = B - \sum_{j=1}^{j=t} D_j$$

Where: D_j = depreciation in year j
$\sum D_j$ = all depreciation through year t

MACRS Depreciation

- Always depreciates to **zero**; no salvage value considered
- Incorporates **switching from DDB to SL** depreciation
- ***Standardized recovery periods*** (n) are tabulated
- MACRS recovery time is always **n+1 years**;
  half-year convention assumes purchase in midyear
- No special spreadsheet function; can arrange **VDB function** to display MACRS depreciation each year

Example: MACRS Depreciation

A finishing machine has a first cost of $20,000 with a $5,000 salvage value after 5 years. Using MACRS, find (a) D and (b) BV for year 3.

Solution: (a) From table, $d_3 = 19.20$

$$D_3 = 20{,}000(0.1920)$$
$$= \$3{,}840$$

(b) $BV_3 = 20{,}000 - 20{,}000(0.20 + 0.32 + 0.1920)$
$$= \$5{,}760$$

Note: Salvage value S = $5,000 is not used by MACRS and $BV_6 = 0$

MACRS Recovery Period

Recovery period (n) is function of ***property class***

Two systems for determining recovery period:

- **general depreciation system (GDS)** **– fastest write-off allowed**
- **alternative depreciation system (ADS)** **– longer recovery; uses SL**

IRS publication 946 gives n values for an asset. For example:

Asset description	MACRS n value: GDS	MACRS n value: ADS range
Special manufacturing devices, racehorses, tractors	3	3 - 5
Computers, oil drilling equipment, autos, trucks, buses	5	6 - 9.5
Office furniture, railroad car, property not in another class	7	10 – 15
Nonresidential real property (not land itself)	39	40

Unit-of-Production (UOP) Depreciation

- Depreciation based on ***usage of equipment***, not time
- Depreciation for year t obtained by relation

$$D_t = \frac{\text{actual usage for year } t}{\text{expected total lifetime usage}}(B - S)$$

Example: A new mixer is expected to process 4 million yd^3 of concrete over 10-year life time. Determine depreciation for year 1 when 400,000 yd^3 is processed. Cost of mixer was \$175,000 with no salvage expected.

Solution: $D_1 = \frac{400{,}000}{4{,}000{,}000}(175{,}000 - 0) = \$17{,}500$

Depletion Methods

Depletion: **book (noncash) method to represent decreasing value of *natural resources***

Two methods: ***cost*** depletion (CD) and ***percentage*** depletion (PD)

Cost depletion: Based on level of activity to remove a natural resource

- Calculation: Multiply factor CD_t by amount of resource removed

  Where: CD_t **= first cost / resource capacity**

- Total depletion can not exceed first cost of the resource

Percentage depletion: Based on gross income (GI) from resource

- Calculation: Multiply GI by standardized rate (%) from table
- Annual depletion can not exceed 50% of company's taxable income (TI)

Example: Cost and Percentage Depletion

A mine purchased for \$3.5 million has a total expected yield of one million ounces of silver. Determine the depletion charge in year 4 when 300,000 ounces are mined and sold for \$30 per ounce using (a) cost depletion, and (b) percentage depletion. (c) Which is larger for year 4?

Solution: Let depletion amounts equal CDA_4 and PDA_4

a) Factor, CD_4 = 3,500,000/ 1,000,000 = \$3.50 per ounce

CDA_4 = 3.50(300,000) = **\$1,050,000**

(b) Percentage depletion rate for silver mines is 0.15

PDA_4 = (0.15)(300,000)(30) = **\$1,350,000**

(c) Claim **percentage depletion** amount, provided it is ≤ 50% of TI

Summary of Important Points

- **Two types** for depreciation: **tax and book**
- Classical methods are **straight line** and **declining balance**
- In USA only, **MACRS** method is ***required*** for ***tax depreciation***
- Determine MACRS recovery period using either **GDS** or **ADS**
- Switching between methods is allowed; MACRS switches automatically from DDB to SL to maximize write-off
- **Depletion** (instead of depreciation) used for ***natural resources***
- ***Two methods*** *of depletion:* ***cost*** *(amount resource removed* × CD_t *factor) and* ***percentage*** *(gross income* × *tabulated %)*

INVENTORY VALUATION

PURPOSE

- *To ensure the inventories are appropriately recognized and measured with reasonable accuracy in the books as on particular date\ period.*

OBJECTIVE AND SCOPE

- *The objective of this accounting policy is to explain the requirements of IFRS and highlight differences between IFRS and Ind AS, wherever applicable. The accounting policy aims to highlight the requirements of ICDS, wherever applicable.*

DEFINITION

Inventories are assets:

- *held for sale in the ordinary course of business and includes finished goods;*
- *in the process of production for such sale and includes work in progress.*

MEASUREMENT

Cost of inventories:

Initial measurement of inventories should be at cost. Subsequent to initial recognition, inventories should be measured at the lower of cost and net realizable value.

DETERMINATION OF NET REALIZABLE VALUE

The following aspects are considered:

- Obsolescence of material due to design change, abandoned projects, process change etc.;
- Reduction in selling price
- Ageing of material

CLASSIFICATION OF INVENTORIES

- Production supplies
- Raw material and components
- Work in progress
- Finished goods

LOCATION OF INVENTORIES

- The inventory locations include following areas:
- Materials/ Vehicles lying in the factory premises.
- Materials lying with vendors / sub contractor.
- Materials/ parts lying with SPD
- Vehicles lying in RSO/ Exports.

Stores and spare parts & consumable tools include:

- Stores and indirect material
- Consumable tools
- Machinery spares

WORK IN PROGRESS

WIP consists of material lying at different stage of completion at the following locations-

- Auto
- Foundry
- Production Engineering
- Electronics and maintenance department

Computation of cost center rates

The computation of burden center rate should be based on budgeted expenses/volume. At the end of each period, adjustment for actual cost should be done through hike and dehike factor.

Stock in trade

It would consist of following:

- Vehicles lying in factory premises
- Vehicles lying in RSO
- Vehicles lying in exports
- Spare parts in SPD
- Spare parts in export
- Scrap stock

Exclusion of overheads

- General R&D & PDC charges
- ESS charge
- HO expenses
- CSR expenses
- Guarantee charges
- Technical knowhow fees
- Loss on sale of assets/assets scraped

DISCLOSURES

THE FINANCIAL STATEMENT SHALL DISCLOSE:

(a) The accounting policies adopted in measuring inventories, including the cost formula used;

(b) The total carrying amount of inventories and the carrying amount in classification appropriate to the entity;

(c) The carrying amount of inventories carried at fair value less costs to sell;

(d) The amount of inventories recognized as an expense during the period

INVENTORY VERIFICATION POLICY

PURPOSE

- *To ensure the inventories are correctly verified and reflected with reasonable accuracy in the books as on particular date.*

OBJECTIVE

- *This is intended to lay down the process to ensure inventories as stated in the books are physically available as on particular date.*

SCOPE

The policy will encompass under mentioned inventories:

- Raw material
- WIP
- Finished goods
- Consumable tools and dies
- Machinery spares

DETAILS

All the inventories need to be verified as planned and any discrepancies found need to be accounted in the books. The following methods adopted for physical verification of inventories are as following:

- **End to end bought out reconciliation(E2E)**
- **Perpetual inventory(PI)**
- **MASOP reconciliation**

ABC analysis guidelines

(a) Auto manufacturing:

CLASS	CONSUMPTION BASE (criteria 1)	Part value base (criteria 2)	FREQUENCY
A	Constituting 85% of total consumption of previous financial year	Per unit value> Rs 2000	Four times a year
B	Constituting 10% of total consumption of previous financial year	Per unit value from Rs 500 to Rs 2000	Two times a year
C	Constituting 5% of total consumption of previous financial year	Unit value upto Rs 500	Once in 3 years

(b) Manufacturing locations- Finished goods

CONSUMPTION BASE	FREQUENCY
100% booking parts	Quarterly

(c) MASOP reconciliation

CONSUMPTION BASE	FREQUENCY
Vendor stock confirmation statement for 100% parts	Once a year
Physical verification at vendor end for 100% parts	Once a year

(d) Spare part division

CLASS	CONSUMPTION BASE	FREQUENCY
A	Constituting 70% of total consumption of previous financial year	Thrice a year
B	Constituting 10% of total consumption of previous financial year	Twice a year
C	Constituting 10% of total consumption of previous financial year	During wall to wall inventory. Once in two years.

MANAGEMENT REVIEW CONTROL

Control	Review of inventory obsolescence
MRC objective	Inventory are not carried at more than their recoverable amount in the books of accounts.
MRC description	Entity reviews the inventory on annual basis for determining obsolete inventory: **CFT constitution**: CFT members of respective plants determines the inventory to be considered obsolete. Decisions are documented in minutes of meeting (MOM): (i) SCM (ii) Material audit (iii) Warehousing operations (iv) Manufacturing (v) Plant finance
Significant accounts impacted	Inventory change account (RM, WIP, FG , Stores & Spares incl. vendor inventory)

Relevant assertion impacted	Existence Completeness Valuation
Management review control	Review of obsolete inventory for write off in any on annual basis.

Financial Statement Analysis - I

ACCT 100

The Need for Comparative Financial Statement (F/S) Analysis

- Investors have interests in the following three characteristics of companies:
- Liquidity: a company's ability to pay current liabilities.
- Profitability: the operating success of a company for a period of time.
- Solvency: the long-term solvency of a company.

Investors and F/S Analysis

- Short term creditors are mostly interested in the liquidity.
- Long-term creditors (i.e., bondholders) and stockholders are more interested in profitability and solvency than in liquidity.
- Ratio analysis can provide liquidity, profitability and solvency information of firms.

Ratio Analysis

- For example, the ratio of current assets over current liabilities (i.e., the current ratio) measure the ability of a firm to pay current liabilities.
- The ratio of total liabilities over total assets (i.e., debt ratio) measures the solvency and the ratio of net income over net sales (i.e., profit margin) measure the profitability.

Comparative Ratio Analysis

- To assess the **adequacy** of these financial ratios, the following comparisons can be performed:

1) **Intra-company comparison**: the ratios are compared with those of previous years' to assess whether these ratios are improved or deteriorated.

2) **Industry comparison**: the ratios are compared with the industry average. Dun & Bradstreet, Moody's and Standard & Poor's publish such averages.

Comparative Ratio Analysis (contd.)

3) **Intercompany comparison**: to compare the ratios with those of one or more competitors. The intercompany comparison is to determine the company's competitive position.

- **Ratio analysis** is used in all three comparisons.

Other Tools for Comparative Financial Statement Analysis

- In addition to ratio analysis , two other tools are also available for statement analysis:

1) **Horizontal analysis**: study the percentage changes of items (accounts) in comparative financial statements.

- This analysis emphasizes on the changes of one single item over time.
- This tool is primary used in **intra-company** comparison.

Other Tools for Comparative Financial Statement Analysis (contd.)

2) **Vertical analysis**: this analysis studies the relationship of one single item with all other items in the statement.

- This analysis is to express each item as a percent of a base item (i.e., net sales of an income statement or total assets of a balance sheet).
- Vertical analysis is used in both intra and inter-company comparison.

Comparative F/S Analysis

- Horizontal analysis is mainly used in intra-company comparison.
- Vertical analysis can be used in both intra and inter-company comparisons.*
- Ratio analysis can be used in intra-company, inter-company and industry comparisons.

* If there is an industry average of vertical analysis, vertical analysis can also be used in industry comparison.

Comparative Analysis –A Note

- The comparative analysis can also be made to any account reported in financial statements.
- Example: A firm can ask whether its earnings are improved from previous years (i.e., intra-company comparison), or whether its earnings are better than the industry norms (i.e., industry comparison) or whether its earnings are better than its major competitor (i.e., intercompany comparison).

Horizontal , Vertical and Ratio Analyses

- Horizontal Analysis: the following slide is an example of horizontal analysis used in intra-company comparison:

Horizontal Analysis –intra-company Comparison

CLARITY COMPANY

Comparative Income Statements (Horizontal Analysis)

	For Years Ended Dec. 31,			(1) Year-to-Year Increase (Decr.) 20x7 to 20x8		20x6 to 20x7	
	20x8	20x7	20x6	Amount	%	Amount	%
Sales	$149,000	$140,000	$119,500	$9,000	6.4	$20,500	17.2
Sales rtns	(29,000)	(30,000)	(29,500)	(1,000)	(3.3)	500	1.7
Sales (net)	$120,000	$110,000	$90,000	$10,000	9.1	$20,000	22.2
CGS	(64,200)	(57,300)	(48,000)	6,900	12.0	9,300	19.4
Gross profit	$55,800	$52,700	$42,000	$3,100	5.9	$10,700	25.5
Selling exp.	(15,800)	(14,300)	(11,800)	1,500	11.2	2,500	21.2
General exp.	(21,100)	(22,200)	(15,350)	(1,100)	0.4	6,850	44.6
Interest exp.	(3,000)	(2,700)	(2,400)	300	11.1	300	12.5
Total exp.	$(39,900)	$(39,200)	$(29,550)	$700	2.6	$9,6503	32.7
Pretax cont. income	$15,900	$13,500	$12,450	$2,400	17.8	$1,050	8.4
I/T exp.	(4,720)	(4,050)	(3,735)	720	17.8	315	8.4
Net income	$11,130	$9,450	$8,715	$1,680	17.8	$,735	8.4
No. of common Shares	5,000	4,700	4,500	300	6.4	200	4.4
EPS*	$1.63	$1.37	$1.27	$.26	19.0	$.10	7.9

* $EPS = \frac{\text{Net Income - Preferred Dividends}}{\text{Average Common Shares Outstanding}}$

Horizontal Analysis (contd.)

CLARITY COMPANY
Comparative Income Statements (Horizontal Analysis)

	For Years Ended Dec. 31,			(1) Year-to-Year Increase (Decr.)				Base-Year-to-Date Increase (Dec.)	
				20x7 to 20x8		20x6 to 20x7		20x6 to 20x8	
	20x8	20x7	20x6	Amount	%	Amount	%	Amount	%
Sales	$149,000	$140,000	$119,500	$9,000	6.4	$20,500	17.2	$ 29,500	24.7
Sales rtns	(29,000)	(30,000)	(29,500)	(1,000)	(3.3)	500	1.7	(500)	(1.7)
Sales (net)	$120,000	$110,000	$90,000	$10,000	9.1	$20,000	22.2	$30,000	33.3
CGS	(64,200)	(57,300)	(48,000)	6,900	12.0	9,300	19.4	16,200	33.8
Gross profit	$55,800	$52,700	$42,000	$3,100	5.9	$10,700	25.5	$13,800	32.9
Selling exp.	(15,800)	(14,300)	(11,800)	1,500	11.2	2,500	21.2	4,000	33.9
General exp.	(21,100)	(22,200)	(15,350)	(1,100)	0.4	6,850	44.6	5,750	37.5
Interest exp.	(3,000)	(2,700)	(2,400)	300	11.1	300	12.5	600	25.0
Total exp.	$(39,900)	$(39,200)	$(29,550)	$700	2.6	$9,650	32.7	$10,350	35.0
Pretax cont. income	$15,900	$13,500	$12,450	$2,400	17.8	$1,050	8.4	$ 3,450	27.7
I/T exp.	(4,720)	(4,050)	(3,735)	720	17.8	315	8.4	1,035	27.7
Net income	$11,130	$9,450	$8,715	$1,680	17.8	$,735	8.4	$2,425	27.7
No. of common Shares	5,000	4,700	4,500	300	6.4	200	4.4	500	11.1
EPS*	$1.63	$1.37	$1.27	$.26	19.0	$.10	7 9 .	$.36	28.3

$$^{*}\ \textit{EPS} = \frac{\textit{Net Income - Preferred Dividends}}{\textit{Average Common Shares Outstanding}}$$

Horizontal Analysis (contd.)

- Trend percentages are computed by selecting a base year whose amounts are set to equal 100 percent. The amounts of each following year are expressed as a percentage of the base amount.
- Example:

Example

(In millions)				(base year)
	20x8	20x7	20x6	20x5
Net Sales	$150	$130	$120	$100
CGS	90	80	75	50
Gross Profit	60	50	45	50

Trend Percentage

	20x8	20x7	20x6	20x5
Net Sales	150%	130%	120%	100%
CGS	180%	160%	150%	100%
Gross Profit	120%	100%	90%	100%

Vertical Analysis

- This analysis emphasizes on the relationship of one single item with all other items on the statement.
- The following example is a vertical analysis used in intra-company comparison.

Vertical Analysis – An Intra-company Comparison

CLARITY COMPANY

Comparative Income Statements (Vertical Analysis)

For Years Ended December 31, 20x7 and 20x8

	20x8		20x7	
	Amount	%	Amount	%
Sales of goods	$149,000	124.2	$140,000	127.3
Sales returns	(29,000)	24.2	(30,000)	27.3
Sales, net (80% on credit)	$120,000	100.0	$110,000	100.0
Cost of goods sold	(64,200)	53.5	(57,300)	52.1
Gross profit	$55,800	46.5	$52,700	47.9
Selling expenses	(15,800)	13.2	(14,300)	13.0
General expenses	(21,100)	17.6	(22,200)	20.2
Interest and other financial charges	(3,000)	2.5	(2,700)	2.5
Total expenses	$(39,900)	33.3	$(39,200)	35.6
Pretax cont. income	$15,900	13.2	$13,500	1 2.3
Income taxes	(4,720)	3.9	(4,050)	3.7
Net income	$11,130	9.3	$9,450	8.6
Number of common shares	5,000		4,700	
Earning per share	$1.63		$1.37	

Vertical Analysis (Contd.)

CLARITY COMPANY
Comparative Retained Earnings Statements
(Vertical Analysis)
For Years Ended December 31, 20x7 and 20x8

	20x8		20x7	
	Amount	%	Amount	%
Beginning retained earnings	$27,350	100.0	$30,300	100.0
Net income	11,130	40.7	9,450	31.1
	$38,480	140.7	$39,750	131.1
Preferred dividends, $3/share	(3,000)	(11.0)	(3,000)	(9.9)
Common dividends, $2/share	(10,000)	(36.6)	(9,400)	(31.0)
Ending retained earnings	$25,480	93.2	$27,350	90.3

Vertical Analysis (Contd.)

CLARITY COMPANY

Comparative Condensed Balance Sheets (Vertical Analysis)

December 31, 20x8 and 20x7

	20x8		20x7	
	Amount	%	Amount	%
Cash and equivalents	$35,000	9.0	$21,500	6.4
Investment securities	20,000	5.2	13,000	3.9
Receivables (net)	7,600	2.0	3,600	1.1
Inventories	6,900	1.8	5,400	1.6
Prepaid items	1,000	0.2	1,200	0.3
Total current assets	$70,500	18.2	$44,700	13.3
Property, plant and equip. (net)	310,000	79.8	282,000	84.2
All other assets	7,800	2.0	8,200	2.5
Total assets	$ 388,300	100.0	$334,900	100.0

Vertical Analysis (contd.)

Total assets	$388,300	100.0	$334,900	100.0
Current liabilities	$31,200	8.0	$37,500	11.2
Long-term liabilities	87,720	22.6	41,050	12.3
Total liabilities	$118,920	30.6	$78,550	23.5
Preferred stock, 7%, $50 par[1]	$50,000	12.9	$50,000	14.9
Common stock, $10 par[2]	50,000	12.9	47,000	14.0
Paid-in capital in excess of Par	143,900	37.1	132,000	39.5
Retained earnings	25,480	6.5	27,350	8.1
Total stockholders' equity	$269,380	69.4	$256,350	76.5
Total liabilities and stockholders' equity	$388,300	100.0	$334,900	100.0

1. The 1,000 shares of preferred stock are noncumulative. The liquidation value of preferred stock is $80 per share.

2. December 31, 20x8, market price is $37.25 per share.

Vertical Analysis (contd.)

- Common-size statements:

  Financial statements are presented in percentages (no dollar amounts). For a common-size income statement, all items are expressed as a percentage of the net sales amount. For a common-size balance sheet statement, each item is expressed as a percentage of total assets.

- Example:

Example: Common-size Statement

CLARITY COMPANY

Comparative Condensed Balance Sheets (Vertical Analysis)

December 31, 20x8, and 20x7

	20x8		20x7
	Percent		Percent
Cash and equivalent	8.5	6.4	
Investment securities	5.2		3.9
Receivables (net)	2.0	1.1	
Inventories	2.3	1.6	
Prepaid items	0.2		0.3
Total current assets	18.2	13.3	
Property, plant and equip. (net)	79.8		84.2
All other assets	2.0	2.5	
Total assets	100.0	100.0	

Example (contd.)

Total assets	100.0	100.0
Current liabilities	8.0	11.2
Long-term liabilities	22.6	12.3
Total liabilities	30.6	23.5
Preferred stock, 7%, $50 par	12.9	14.8
Common stock, $10 par	12.9	14.0
Paid-in capita in excess of par	37.1	39.5
Retained earnings	6.5	8.1
Total stockholders' equity	69.4	76.5
Total liabilities and stockholders' equity	100.0	100.0

Vertical Analysis – An Inter-company Comparison

- Benchmarking: comparing the performance of a company to a standard set by other companies (i.e., inter-company comparison) or by a industry (industry comparison).

- Example: comparing company’s vertical analysis percentages against a key competitor’s vertical analysis percentages (i.e., inter-company comparison).

Thank You

WELCOME

Ratio Analysis

Ratio Analysis

- Ratio analysis is used in all three comparisons (i.e., intra-company, intercompany and industry comparisons).
- Ratios used in analysis include:

1. Liquidity Ratios (including activity ratios),
2. Solvency Ratios, and
3. Profitability Ratios (including company's and stockholders').

Liquidity Ratios

- Measuring a company's ability to pay current liabilities.
- These ratios are served to evaluate the company's ability to meet their current maturing financial obligations.

Liquidity Ratios (contd.)

a. Current ratio = $\dfrac{\text{Current Assets}}{\text{Current Liabilities}}$

(Current assets including cash, short-term investment securities, short-term receivables, inventory and prepaid expense.)

- This ratio measures the ability to pay current liabilities with current assets.

Liquidity Ratios (contd.)

b. Acid-test (quick) ratio = $\frac{\text{Quick Assets}}{\text{Current Liabilities}}$

(Quick assets including cash, short-term investments, and net current receivable.)

- This ratio Indicates the ability to pay current liability using quick assets.

Example: Clarity Corp.

LIQUIDITY RATIOS

Ratio	Formula	Calculations (20x8)
Current Ratio	$\dfrac{\text{Current Assets}}{\text{Current Liabilities}}$	$\dfrac{\$70{,}500}{\$31{,}200} = 2.26$ times
Acid-Test Ratio	$\dfrac{\text{Quick Assets}}{\text{Current Liabilities}}$	$\dfrac{\$62{,}600}{\$31{,}200} = 2.01$ times

Liquidity /Activity Ratios

- Measure the effectiveness of a company in selling inventory (i.e., inventory turnover rate) and in collecting receivables (i.e., receivable turnover rate).
- These ratios are indicators of the efficiency with which the company uses its short-term economic resources (i.e., inventory and receivables).

Liquidity /Activity Ratios (Contd.)

- These ratios are also referred to as liquidity ratios.
- The faster a company can sell inventory or collect receivable, the faster it can convert inventory or receivables in to the most liquid asset - cash.
- As a result, both inventory and receivable turnover rates are also referred as liquidity ratios.

Liquidity/Activity Ratios (contd.)

a. $$\text{Inventory turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

- This ratio indicates the number of times a company sells its average inventory during a period.
- Use 365 days divided by this ratio will results in the days needed to sell the inventory.

Liquidity/Activity Ratios (contd.)

$$\text{b. Accounts receivable turnover} = \frac{\text{Net Credit Sales}}{\text{Average Net A/R}}$$

- The ratio measures the company's ability to collect cash from credit customers.
- Use 365 days divided by this ratio will result in the days needed to collect receivables.

Liquidity/Activity Ratios (contd.)

c. Days' sales in receivables = $\dfrac{\text{Average Net A/R}}{\text{One Day's Sales}}$

- This ratio shows how many days it takes to collect the receivables.
- This is an alternative to 365 days /receivable turnover rate in deriving the days needed to collect receivable.

Example: Clarity Corp.

ACTIVITY RATIOS

Ratio	Formula	Calculations (20x8)	
Inventory Turnover	$\frac{\text{CGS}}{\text{Avg Inventory}}$	$\frac{\$64,200}{\frac{\$8,900+\$5,400}{2}}$	=9 times or 41 days
Receivables Turnover	$\frac{\text{Net Credit Sales}}{\text{Avg Net Rcvbls}}$	$\frac{\$120,000\text{x}0.80}{\frac{\$7,600+\$3,600}{2}}$	= 17.14 times or 21 days
Day's Sales in Rece.	$\frac{\text{Avg Net A/R}}{\text{One Day's Sales}}$	$\frac{(7600+3600)/2}{(120,000/365)}$	= 21 days

Solvency Ratios

- Indicators of long-run solvency and stability of a company.

a. $$\text{Debt ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

- This ratio indicates the percentage of assets financed with debt.

Solvency Ratios (contd.)

$$\text{b. Times interest earned} = \frac{(\text{Pretax Inc.} + \text{Int. Exp})^{*}}{\text{Interest Expense}}$$

- This ratio indicates the number of times operating income can cover interest expense.

*Income before income taxes and interest expense

Example: Clarity Corp.

Solvency RATIOS

Ratio	Formula	Calculations (20x8)	
Debt Ratio	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$	$\frac{\$118{,}920}{\$388{,}300}$	= 30.63%
Times Int. Earned	$\frac{\text{Pretax Inc.+Int.Ex}}{\text{Interest Expense}}$	$\frac{\$15{,}900+3{,}000}{\$3{,}000}$	= 6.3 times

Profitability Ratios-Company Related

- Indicators of how effective a company has been in meeting its overall profit (return) objectives, particularly in relation to the resources invested.

a. Profit margin (Rate of return on net sales)

$$= \frac{\text{Net Income}}{\text{Net Sales}}$$

Company Profitability Ratios (contd.)

b. Return on assets

$$= \frac{\text{Net Income+ int. exp. (net of tax)}}{\text{Average Total Assets}}$$

c. Return on **comm**. stockholders' equity

$$= \frac{\text{Net Income - Preferred Dividends}}{\text{Average Stockholders' Equity}}$$

d. Asset Turnover (to measure how efficiently a company uses assets to generate sales)

$$= \frac{\text{Net Sales}}{\text{Average Asset}}$$

Example: Clarity Corp.

COMPANY PROFITABILITY RATIOS

Ratio	Formula	Calculations (20x8)
Profit Margin	$\frac{\text{Net Income}}{\text{Net Sales}}$	$\frac{\$11{,}1300}{\$120{,}000} = 9.28\%$
Return on Total Assets	$\frac{\text{N/I +int. exp (net of tax)}}{\text{Average Total Assets}}$	$\frac{\$11{,}130 + 0.7\text{x}\$3{,}000}{\frac{\$388{,}300 + \$334{,}900}{2}} = 371\%$
Return on Common Stockholders' Equity	$\frac{\text{Net Income- Pref.div.}}{\text{Average Stockholders' Equity}}$	$\frac{\$11{,}130-\$3{,}000}{\frac{\$269{,}380+\$256{,}350}{2}} = 3.16\%$
Asset Turnover	$\frac{\text{Net Sales}}{\text{Average Assets}}$	$\frac{\$120{,}000}{\frac{\$388{,}300 + \$334{,}900}{2}} = 33.2\%$

Example: Contd.

- When the rate of return on equity is higher than the rate return on assets, it indicates that the company earns a higher return from borrowed money than the interest paid for the borrowed money.
- It is also an indication of an effective use of leverage .

Profitability Ratios- Shareholders Related

- Indicators of how effective a company has been in meeting the profit objectives of its shareholders.

Profitability Ratios –Shareholders (contd.)

a. Earnings per share

$$= \frac{\text{Net Income - Preferred Dividends}}{\text{Average Common Shares Outstanding}}$$

- This ratio given the amount of net income per common share.

Profitability Ratios – Shareholders (contd.)

b. $$\text{Price/Earnings} = \frac{\text{Market Price Per Share}}{\text{Earnings Per Share}}$$

- Information provided: Indicates the market price when earnings equal to $1.

Profitability Ratios-Shareholders (contd.)

c. Dividend yield = Dividend Per Comm. Share -

Mkt Price Per Comm. Share

- Information provided: Showing dividends as a percentage of market price.

d. Payout Ratio= Cash Divideds

Net income

- Provides the earnings distributed to shareholders in the form of cash dividends.

Profitability Ratios- Shareholders (contd.)

e. Book value per common share

$$= \frac{\text{Total Stockholders' Equity - Preferred equity}}{\text{Comm. Stock Share Outstanding}}$$

- Information provided: Indicated the recorded book value per common share.
- Preferred equity: liquidation value of preferred shares.

Example: Clarity Corp.

STOCKHOLDER PROFITABILITY RATIOS

Ratio	Formula	Calculations (20x8)
EPS	N/I – Preferred Dividends / Avg. Comm. Shares Outstanding	($11,130 - $3,000) / 5,000 = $1.63
Price/Earnings	Market Price Per Comm. Share / Earnings Per Share	$37.25 / $1.63 = 22.9 times
Dividend Yield	Dividends Per Comm. Share / Market Price Per Com. Share	$2.00 / $37.25 = 5.37%

Example: Contd.

Ratio	Formula	Calculations (20x8)
Payout Ratio	$\frac{\text{Cash Dividends}}{\text{Net Income}}$	$\frac{\$10{,}000}{\$11{,}130} = 89.8\%$
Book value (per share of Common stock)	Total Stockholders' Equity - Preferred equity Common share out.	$\frac{\$269{,}380 - (\$80 \times 1{,}000)}{5{,}400 \text{ shares}} = \$37{,}88$

Income Statement

Components of an income statement include:

1) Income from **continuing** operations

2) Results from **discontinued** operations (net of income tax)

3) Results of Extraordinary Items (net of income tax)

4) Net income

Irregular Items of Income Statement

- Discounted operations and extraordinary items are two irregular items reported in the income statement.

1)Discounted operations:

The results from the **disposal** of a component of a business are reported in the income statement separately from other items.

Irregular Items of Income Statement

- The reporting elements of the discontinued operations include:
  - operating income (or loss) of the discontinued component from the beginning of the reporting period to the disposal date (net of tax), and
  - disposal gain (or loss) on the disposal of the component (net of tax).

Extraordinary Items

- Extraordinary items are events meet the following criteria:
  1. Unusual in nature.
  2. Infrequent in occurrence.
- The extraordinary items are reported **net of taxes** in a separate section of the income statement after the discontinued operations.

Examples of Extraordinary Items

- Direct result of a major casualty (i.e., flood, earthquake….).
- Expropriation by a foreign government.
- Prohibition under a newly enacted law.

Other Revenues (or Gains) and Expenses (or Losses)

- If an event meets only one (i.e., unusual in nature) but not the other criteria of the extraordinary items, the results of this event would be reported in the continuing operation section of an income statement under “other revenues and gains” or “other expenses and losses”.

Changes in Accounting Principle

- A change in accounting principle occurs when a company changes the accounting method from one acceptable accounting method (i.e., FIFO) to another acceptable accounting method (i.e., LIFO).
- The accounting treatment for this change is to report both the current and previous statements using the new accounting method (i.e., to account this change retrospectively).

Comprehensive Income

- The change in equity from non-owner transactions (i.e., the change in equity excluding investments from owners and dividends distribution).

Comprehensive Income (contd.)

- Components of comprehensive income:

  a. Net income (as reported in the I/S)

  b. Other comprehensive income items*:

  These gains and losses* ***are not reported in the I/S**, but in the stockholders' section of a B/S. They bypass the I/S but affect stockholders' equity.*

Comprehensive Income (contd.)

- Other comprehensive income item include:
  - unrealized gains (losses) from valuation of investments,
  - gain (loss) of foreign currency translation adjustments

Comprehensive Income Presentation: a combined Income Statement Format

NEE Corp.
Combined Statement of Comprehensive Income
For the Year Ended 12/31/x8

Sales Revenue	$1,000,000
CGS	500,000
Gross Profit	500,000
Operating Expenses	$100,000
Net Income	$400,000
Unrealized Loss, net of tax	40,000
Comprehensive Income	$360,000

Quality of Earnings

- Quality of earnings is important to financial statement analysis.
- Factors affect the quality of earnings include (source: Financial Accouting by Weygandt, Kimmel and Kieso)

1. Alternative accounting methods.
2. Pro Forma Income.
3. Improper Recognition.