Unit 1 Financial Accounting – Introduction

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1.1 Introduction

All of you, at some point of time, would have visited a grocery shop or a medical shop. You might have wondered how the owner maintains the record of all the transactions done during a particular period of time, say a year. You might have also wondered why the owner has to maintain records, how is it beneficial, and whether maintaining records is mandatory? As against this, imagine the role of a business organisation. It provides goods that range from simple safety pins to fighter aircrafts. Those who are in service industry provide various services such as transportation services, hospitality services, developing complex software programs, etc.

To make a sound decision, a business enterprise needs accounting information. This information is also needed by government agencies, regulatory bodies, analysts, and individuals at various point of time and at different levels.

Accounting is one of the oldest, structured management information system. It has evolved in response to the social and economic needs of society. Accounting, as an information system, is concerned with identification, measurement, and communication of economic information of an organisation to its users who may need the information for rational decision making. The accounting system is a means to provide relevant and reliable financial information to all the interested parties.

In this unit, we will understand the meaning of accounting, book-keeping, accountancy, and the steps involved in accounting process. We will also discuss the various objectives of accounting, the differences between book-keeping, accountancy, and accounting along with how accounting information is used by various stake holders. We will also focus on the basic terminologies used in accounting.

Objectives:

After studying this unit, you should be able to:

- define book-keeping, accountancy, and accounting
- describe the accounting process
- explain the objectives of accounting
- distinguish between book-keeping and accounting
- analyse the informational requirements of various users of accounting information and also the limitations of accounting.
- explain the basic terminologies used in this subject

1.2 Meaning and Definition of Accounting, book keeping

1.2.1 Accounting

It is the application of various accounting principles and methods in book-keeping. It explains 'why to do' and 'how to do' various aspects of accounting. It tells us why and how to prepare the books of accounts and how to summarise the accounting information.

1.2.2 Definitions of accounting

The earlier definitions of Accounting emphasised on the recording aspect. One such definition was given by American Institute of Certified Public Accountants (AICPA) in 1941.

"Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events which are, in part at least of a financial character, and interpreting the results there of."

As Accounting evolved, businesses grew larger and the number of stakeholders in the business increased. The emphasis then shifted from just recording to using accounting information for decision-making by such stakeholders. Accordingly, the definitions of Accounting were modified by the professional and other regulatory bodies. Two such definitions are provided, which are the accepted definitions across the world till today.

1. Definition given by American Accounting Association (AAA) in 1966.

   "Accounting is the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by the users of the information."

2. Definition given by AICPA in 1970.

   "Accounting is a service activity. Its function is to provide quantitative information, primarily financial in nature, and about economic activities, that is intended to be useful in making economic decisions."

1.2.3 Book-keeping

It is defined as the science and art of recording business transactions in a systematic manner in certain set of books known as books of accounts. The following are the functions of book-keeping:

- To identify the transactions and events
- To measure the identified transactions and events in a common measuring unit
- To record them in suitable books of accounts
- To classify them in a book called the ledger

1.3 Accounting Process

Let us now study the process of accounting in detail.

1. **Identifying the transactions and events –** This is the first step in the accounting process. It recognises the transactions of financial character that are essential to be recorded in the books of accounts. When money,

goods, or services are transferred from one person or account to another person or account, it is known as a transaction.

2. **Measuring –** This means expressing the value of events and transactions in terms of money (Rupees in India).
   Measuring has become an important challenge for the accountants and the business entities. This is due to the following reasons:
   a) Changing nature of business activities – The complexity of today's business models has also changed the way accounting needs to be done. Technology enabled services like web designing and financial services like wealth management are the thriving businesses. The nature of such business activities is such that it becomes difficult to measure the transactions in terms of money.
   b) Business crossing international borders – All business entities today, whether small or big, have transactions crossing the borders. They have spending or earnings and payables and receivables in foreign currencies. Measuring such transactions is a big challenge as they have to be translated into home currency before they can be recorded.

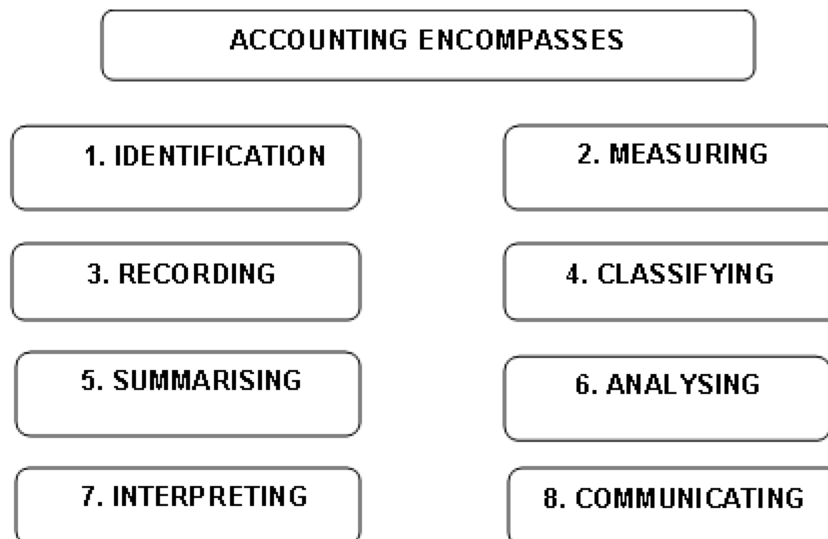

Figure 1.1: depicts the process of accounting.

3. **Recording –** The next process after measuring the transactions is the recording**.** It deals with recording of identified transactions and events in a systematic manner in the books of original entry in accordance with the principles of accountancy. The book in which transactions are first recorded is called the Journal.
4. **Classifying –** All the recorded transactions do not make any sense unless they are processed and presented in a manner that is useful to the intended user. The functions of classifying and summarising serve this purpose. Classifying deals with periodic grouping of transactions of similar nature. For this purpose, a separate book called Ledger is maintained. It is a book where transactions of similar nature are maintained at one place. The transactions that appear in the books of original entry (Journal) are transferred to appropriate places in the book of final entry (Ledger) by a process called Posting. For example, all purchases of goods made for cash or on credit on different dates are brought to purchases account.
5. **Summarising –** The end objective of any business is to make profit. To know if this objective was achieved, it is necessary to summarise all the transactions that occurred and are recorded. This requires analysing total expenses or losses, total income or gain, total assets, and total liabilities. This function involves the preparation of financial statements such as income statement, balance sheet, statement of changes in financial position, and cash flow statement.
6. **Analysing –** It deals with the establishment of relationship between the various items or group of items taken from income statement or balance sheet or both. Its purpose is to identify the financial strengths and weaknesses of an enterprise. It involves using various tools like Ratio Analysis, Fund Flow Analysis, Cash Flow Analysis, etc. (discussed in subsequent units).
7. **Interpreting –** This step explains the importance of all the datas in a manner that the end users of financial statements can make a meaningful judgment about the financial position and profitability of the business.
8. **Communicating –** It deals with communicating the analysed and interpreted data in the form of financial reports or statements to the

users of financial information. For example, Profit and Loss account, Balance Sheet, Cash Flow and Funds Flow statement, Auditor's report, etc. It is an important part of Accounting to decide what to communicate, how to communicate, how much to communicate, when to communicate, and in what form to communicate.

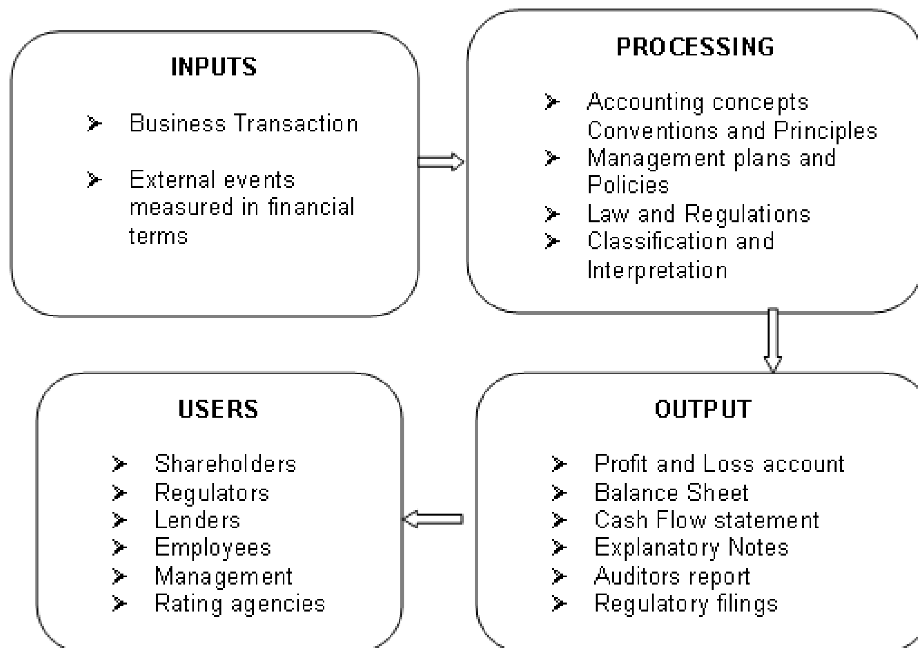

Figure 1.2: Accounting Information System
(Source: Adapted from Financial Accounting, Management perspective by R. Narayaswamy)

Self Assessment Questions

1. Book-keeping _________ the transactions and events, _________ the identified transactions and events in a common measuring unit, records them in suitable books of accounts and finally classifies them in the ledger.
2. Accounting, in addition to book-keeping, involves ________ the classified transactions and ________ the summarised results.
3. ____________ interprets the analysed results and communicates the interpreted information to the interested parties.

Activity 1:

Visit www.futureaccountant.com Under Academy click on financial accounting to get study notes on (1) The need for accounting (2) Basic purpose of Accounting and (3) The objective of accounting and much more.

1.4 Objectives of Accounting

Accounting involves the following functions and objectives:

- Accounting assists in systematic recording of all business events or transactions.
- Accounting measures the financial performance of an enterprise.
- Accounting facilitates reporting of results to both internal and external users. The management requires information for internal purpose at various levels of operations.
- Accounting is required to fulfil the statutory requirements of various regulatory bodies such as Registrar of Companies, Securities Exchange Board of India (SEBI) income tax authorities, and the Government.
- Accounting helps in internal control by holding the concerned persons responsible for any errors, lapses, or under performances.

Self Assessment Questions

4. The financial performance of an enterprise is ascertained by preparing income statement, balance sheet, and cash flow statement. (True/False)
5. Expand SEBI.
6. Mention any five stakeholders of a business.

1.5 Distinction between Book-keeping and Accounting

Table 1.1 shows the difference between book-keeping and Accounting.

Table 1.1: Difference between Book-Keeping and Accounting

Book-keeping	Accounting
• It is a process of identifying, measuring, recording, and analysing the transactions in books of accounts	• It involves summarising the classified transactions, interpreting the analysed results, and communicating the information to the users of financial statement
• Adopts principles of accounting for recording	• Analysing and interpreting requires skill, knowledge, and experience
• Book-keeping is the first stage of accounting process	• Accounting follows book-keeping. It is the second stage
• The objective is to prepare final accounts and balance sheet in a systematic manner at the end of accounting period	• The objective is to ascertain net results of financial operations and communicate the results to all stakeholders in a manner they understand
• Account executives who perform this function may not require higher level of knowledge	• Accountants who perform this function need higher analytical skills to interpret the data and to take appropriate decisions
• The job is routine and clerical in nature	• The job is non-routine but analytical in nature

1.6 Users of Accounting Information

Accounting reports are designed to meet the common information needs of most decision makers. These decision makers are broadly classified into the following eight groups.

1. Investors
2. Lenders
3. Regulators, Rating Agencies, and Security Analyst
4. Management
5. Employees, Trade Unions, and Tax Authorities
6. Customers
7. Government and Regulatory Agencies
8. Public

The examples for each category of user and their typical information needs are shown in Table 1.2.

Table 1.2: Users of Accounting Information and Their Informational Needs

Users	Examples	Typical questions or concerns
Investors, Security analysts, Portfolio managers	Retail investors, Institutional investors, Foreign Institutional investors (FIIs), Mutual funds, Private equity funds, Hedge funds, Equity analysts, Bond analysts Credit rating agencies, Investment banks	Should we buy, sell, or hold the company's share? Will a share yield good dividends regularly? Is the share good for long term or short term? Are the company's fundamentals strong?
Lenders	Banks Debenture holders	Can the company pay the principal and interest on time? How good is the credit history of the borrower? Is the company having adequate asset base to provide as security for the loan? How viable are the projects of the company, which are going to be financed? How is the company performing relative to the competitors? Has the company's financial performance been stable? Do the company's financial statements depict true position?
Management	Top Management like Board of Directors, Managing Director, CEO or President, Middle level, Management like Finance Manager, Marketing Manager, Operations Manager, Productions Manager, R&D Manager	Are the profits reasonable, below average or above average? Are the costs under control? Is the sales level or turnover good? How are we performing relative to our competitors? Which projects should we invest in? Are our operations adequately profitable? Which sections, divisions, operations, branches, or subsidiaries are performing well

		and which are not? Do the company's financial statements depict true position?
Employees trade unions	Employees like industrial and office workers, Trade unions, Federations of Trade unions	Is the company going to survive for long so that we can have job security? Has the company's financial performance been stable so that we can expect regular or prompt payment? How much wage increment and bonus can our employer afford? Can we expect Employee Stock Option Plan? Can our company provide benefits like group insurance? Can our company honour future obligations like pension, gratuity, etc.?
Creditors	Suppliers of materials, services, and utilities Trade financiers Short-term lenders	Will the company continue to be or become a major source of business for us? Can the company make payment for purchases on time? Can the company pay back to us on time?
Customers	Past, present, and prospective customers	Is the company going to survive for long so that we can comfortably depend on the company for supplies? Can the company be depended upon for spares and accessories also? Is the company's position good enough to honour warranty obligations?
Government and Regulatory authorities	Income tax officers Customs officers Ministry of finance Ministry of Corporate affairs Securities and Exchange Board of India Reserve Bank of India Stock Exchanges Pollution Control Board	Is the company paying all the taxes promptly? Is the company abiding to all the legal requirements? Is the company reporting its financial information as per statutory and professional requirements?

		Is the company conducting operations as per statutory requirements with respect to method, safety, and environment concerns? Is the company overcharging consumers by virtue of its monopoly position?
The Public	Local community Political parties Social activists Public affairs groups Consumer groups Environments activists	Is the company conducting operations as per statutory requirements with respect to method, safety, and environment concerns? Are the company's operations and promotion methods used having a negative influence on the society? Does the company exploit local suppliers and labour? Does the company earn profits by compromising on the product quality? Does the company take adequate pollution control measures? Does the company deter competition in the industry? Does the company earn profits by undue exploitation of the natural resources causing imbalances and disrupting the life of local community?

(Source: Adapted from Financial Accounting, Management perspective by R. Narayaswamy. 3/e pp 15, PHI)

Activity 2:

The following is the abstract of annual report of Sundaram Clayton Limited for the year 2008 –

During the year under review, the vehicle industry registered a negative growth of 2.1%. While the medium/heavy commercial vehicles segment recorded a negative growth of 1%, the light commercial vehicle segment registered a growth of 13%. Car segment achieved a positive growth of 14% and two wheeler segments suffered a negative growth of 5%.

Despite this, the Company achieved sales of Rs. 427 crores during 2007-08 as against Rs. 309 crores in 2006-07, registering a growth of 38.2%.

As an investment advisor tracking automobile sector, how would you use this information?

Hint: The Company may still be risky for investment as the industry has been registering negative growth.

Self Assessment Questions

7. ________ are chief provider of risk capital and keen to understand both the return from their investments and the associated risk.
8. __________ use financial reports for negotiating wage package, declaration of bonus, and other benefits.
9. ____________ has a legitimate interest in financial reports of publicly held enterprises to ensure efficient operation of capital market.
10. The regulatory agencies use ______________ to take action against the firm when appropriate returns are not filed in time or when the returns fail to provide true and fair position of the business or to take appropriate action against the firm when complaints or misappropriation are being lodged.

1.7 Limitations of Accounting

Accounting has certain limitations, they are listed below:

- Accounting measures only such transactions that can be measured in terms of money. Qualitative resources like leadership of top brass, highly talented human resource, highly motivated team, best products, the power of resource and development, brand image, etc. are not measured and recorded.
- Accounting is not free from bias. The accountants have some leeway or freedom on the methods of depreciation charged, inventory valuation, etc. through which profit or financial performance can be manipulated.
- Accounting ignores the price level changes when financial statements are prepared on historical cost. Fixed assets are shown in the balance

sheet at historical cost less accumulated depreciation and not at their original cost.

Window dressing

Accounting policies can be manipulated to present a picture of the financial statements in a way that we desire, rather than the actual one. This is called window dressing. The reasons for window dressing can be to project an image of low risk, or to promote a perception that management is competent and thereby attract investors and lenders, get higher credit rating and also to increase managerial compensation.

The following types of manipulations are normally resorted to by the company for the purpose of window dressing.

1. Inflate the sales for the current year by advancing the sales from the following year.
2. Alter the 'other income' figure by playing with non-operational items.
3. Fiddle with the method and rate of depreciation.
4. Fiddle with the method of inventory valuation.
5. Defer certain discretionary expenses to the following year.
6. Make inadequate provisions for contingent liabilities.
7. Make extra provisions in prosperous periods and write them back in lean periods.

(Source: Dr. Prasanna Chandra 'Managing Investments')

Self Assessment Questions

11. Accounting grossly lacks _____________ elements.
12. The exact picture of the financial situation can be ascertained only on the _________ of an enterprise.
13. The danger of ____________ arises when the management decides to incorporate wrong figures to artificially inflate revenue or deflate losses or when there is a threat of hostile takeover.
14. Accounting ignores the price level changes when financial statements are prepared on ___________.

1.8 Basic Terminologies

To understand the subject of Accounting, a proper understanding of the following terms is essential.

1. **Transaction:** It is transfer of money, goods, or service from one person or account to another person or account. There are cash transactions, credit transactions, and paper transactions. In all cash transactions, cash is paid or received immediately. In credit transactions, there is a promise to pay or receive cash at a future date. In paper transactions, there is no cash inflow or outflow, but adjustment is made only in the records. (Bad debts of previous year are written off; depreciation provided on fixed assets, etc.).
2. **Capital:** Funds brought in to start a business, by the owner or owners. In the case of a company, capital is collected by issue of shares. **Share:** A share in a company is one of the units into which the total capital of the company is divided.
3. **Assets:** An asset is a resource legally owned by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise. For example, land and buildings, plant and machinery, furniture and fixtures, cash in hand and at bank, debtors and stock, etc. are regarded as assets.

   Assets are classified based on the purpose for which an asset is held. Assets may be fixed, current, liquid, or fictitious.
4. **Fixed assets** are those which are held for use in the production or supply of goods and services and not for resale in the normal course of business. For example, land, plant and machinery are fixed assets. An exception to this is, for a land developer, land is considered as current asset because the developer is involved in buying and selling of land.
5. **Current assets** are those which are held or receivable within a year or within the operating cycle of the business. They are intended to be converted into cash within a short period of time. For example, stock in trade, debtors, bills receivable, cash at bank, etc.
6. **Liquid assets** are those which can be easily converted into cash. For example, cash in hand, cash at bank, marketable investments, etc.

Fictitious assets are those which cannot be written off during the period of their incidence. For example, promotional expenses of a company, which cannot be treated as expenditure in the year of incidence, are shown as fictitious assets.

7. **Liability:** It is a financial obligation of an enterprise that arises from a past event, the settlement of which is expected to result in an outflow of resources embodying economic benefit. For example, loans payable, salaries payable, term loans.
8. **Current liability:** It is an obligation which has to be satisfied within a year. For example, payment to be made to sundry creditors for the goods supplied by them on credit; bills payable accepted by the businessman; overdraft raised by the businessman in a bank, etc.
9. **Equity:** Equity is the residual interest in the asset of the enterprise after deducting all its liabilities. The equity of a company is called shareholders' equity. Its components include share capital, share premium, and retained earnings.
10. **Entity:** It is an economic unit that performs economic activities.
11. **Sole trader:** A single individual carrying on business with or without the help of kith and kin is called a sole trader.
12. **Partnership:** It is a relationship between partners to contribute capital to start a business with an agreement to distribute profits and losses in an agreed proportion. Partnership is a business being carried on by all or any one partner acting for all. Partnership firm refers to business whereas the partnership refers to relationship caused by the agreement.
13. **Joint stock Company:** It is an organisation, for which the capital is contributed by shareholders to carry on business. It is registered under Companies Act and has a legal entity, having perpetual existence and a common seal.
14. **Goods:** Goods refer to merchandise, commodities, products, articles, or things in which a trader deals. It represents commodities or things meant for resale. Goods account is divided into the following six types.
    - **Purchases**: Goods purchased by a business are called purchases.
    - **Sales:** Goods sold by a business are called sales.

- **Purchases return or returns outward:** Goods returned by a business to its suppliers out of the purchases already made from them are called purchase returns.
- **Sales returns or returns inward:** Goods returned to a business by its customers out of the sales already made to them are called sales returns.
- **Opening stock:** Unsold goods lying in a business at the beginning of a year are called opening stock.
- **Closing stock:** Unsold goods lying in a business at the end of a year are called closing stock.

15. **Inventory:** Inventory refers to goods held by a business for sale in the ordinary course of business or for consumption in the production of goods or service for sale. It includes stock of raw materials, stock of work in progress and stock of finished goods.
16. **Drawings:** It refers to cash, goods, or any other asset withdrawn by the proprietor from his or her business for his or her personal or domestic use. In short, amount the owner withdraws from his or her business for living and personal expenses.
17. **Debtor:** A debtor is a person who owes money to the business. A debtor may be of four types.
    - **Trade debtor** is a person who owes money to the business for the goods supplied to him or her on credit.
    - **A loan debtor** is a person who owes money to the business for the loan advanced to him or her.
    - **Debtor for asset sold** is a debtor who owes money to the business for any asset sold to him or her on credit.
    - **Debtor for service rendered** is a debtor who owes money to the business for the service rendered to him or her on credit.
18. **Debt:** The amount due from a debtor to the business is called a “Debt”. Debt may be of three types:
    - **Good debt** refers to fully recoverable debt.
    - **Bad debt** refers to debt, which is not recoverable.
    - **Doubtful debt** refers to debt whose recovery is doubtful.

19. **Creditors:** A creditor is a person to whom the business owes money. A creditor may also be of four types.
    - **Trade creditor** is a person to whom the business owes money for goods purchased from him or her on credit.
    - **Loan creditor** is a person to whom the business owes money for the loan borrowed from him or her.
    - **Creditor for asset purchased** is a creditor to whom the business owes money for any asset purchased from him or her on credit.
    - **Expenses creditor** refers to a creditor to whom the business owes money for any service received from him or her on credit. For example, salaries unpaid, commission unpaid, etc.
20. **Loss:** It refers to money or the worth of money given up without any benefit in return. For example, loss of cash by theft, loss of goods by fire, etc. It is a situation where in the expenses of the business exceeds revenues. An expense brings some benefits, but loss does not bring any benefit.
21. **Profit:** It is a situation where the revenue of a business exceeds its expenses. In other words, the amount earned is greater than the expenses.
22. **Journal:** A journal is a daily record of business transactions. It is a book of original, prime, or first entry in which all the business transactions are first entered in the specified manner in the order of dates. A preliminary record where business transaction is first entered into the accounting system.
23. **Ledger:** A ledger is an account book in which all the accounts are maintained. It is the books of final entry as well as principal book of accounts.
24. **Entry:** It is the record of a transaction made in any book of account, either in the book of original entry or in the books of final entry.
25. **Narration:** It is a brief explanation of a journal entry. It is given below the journal entry, within brackets. It gives the explanation for that particular journal entry.
26. **Posting:** Posting is the process of entering the information already recorded in the journal or in any of the subsidiary books in the ledger.

In other words, it is a process of transferring balances from book-keeping records called journals to a final book-keeping record called the general ledger.

27. **Voucher:** Voucher is a document which serves as an evidence for transactions.
28. **Trial balance:** A list of all ledger account balances on a given day.
29. **Balance sheet:** It is the financial statement, which shows the amount and nature of business assets, liabilities, and owner's equity at a specific point in time. It is also known as a Statement of Financial Position or a Statement of Financial Condition.
30. **Carried Forward (c/f) or Carried Down (c/d):** It is used to transfer a total or a balance figure from one period to the next or from one page to the next.
31. **Brought Forward (b/f) or Brought Down (b/d):** It is used to bring an amount (balance or total) from a previous period to the current period or from a previous page to the current page.
32. **Bill of exchange:** It is a written documentary evidence that contains an unconditional order signed by the maker, directing a certain person to pay a certain sum of money only to, or to the order of, a certain person or the bearer of the instrument.
33. **Bills payable:** It is a bill of exchange stating an obligation to pay a certain sum of money at a specified date.
34. **Bills receivable:** It is a bill of exchange containing an acceptance from the drawee (or payee) for a certain sum of money at a specified date.

Self Assessment Questions

15. The resources owned by a business are called
    A. Equity
    B. Assets
    C. Liabilities
    D. Capital
16. The individuals and entities who buy goods from the company on credit are called
    A. Borrowers

B. Creditors
C. Debtors
D. Bad debtors

17. A person or entity who has an interest in the economic performance of a business
    A. Well wisher
    B. Stake holder
    C. Legal advisor
    D. Successors
18. A business owned by a single individual
    A. Sole proprietary concern
    B. Partnership
    C. Body of Individuals
    D. Company
19. A business owned by two or more individuals
    A. Sole proprietary concern
    B. Partnership
    C. Body of Individuals
    D. Company
20. A business owned by more than 50 individuals
    A. Sole proprietary concern
    B. Partnership
    C. Body of Individuals
    D. Company

Activity 3:
Visit websites of one or two companies like SBI or RIL and take a cursory look at their Annual Reports. Focus on Financial Highlights, Directors' Report, Auditors' Report, and Management Discussion and Analysis.

1.9 Summary

Let us recapitulate the important concepts discussed in this unit:

- Accounting is the process of identifying the transactions and events, measuring the transactions and events in terms of money, recording them in a systematic manner in the books of accounts, classifying or

grouping them and finally summarising the transactions in a manner useful to the users of accounting information.

- The main objective of accounting is to report financial information to the stakeholders.
- The users of accounting information are investors, lenders, regulators, rating agencies, security analysts, management, employees, trade unions, tax authorities, customers, government, and the general public.
- The information required is provided to them through a statutory document of the company called the Annual Report.
- Accounting has some limitations. But they can be overcome by taking due care.

1.10 Glossary

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

Book-keeping: The process of maintaining the books of accounts based on principles of Accounting.

Stakeholders: Group of people who have some interest in the company directly, indirectly, or monetarily.

1.11 Terminal Questions

1. Explain the process involved in accounting.
2. What are the objectives of accounting?
3. Distinguish between book-keeping and accountancy.
4. How accounting information is used by investors and lenders?
5. How do the Government and Regulatory agencies use accounting information to regulate the activities of the firm?

1.12 Answers

Self Assessment Questions

1. identifies, measures
2. Summarising, analysing

3. Accounting
4. True
5. Securities and Exchange Board of India
6. Shareholders, Creditors, Bankers, Government, Employees
7. Investors
8. Trade Union
9. Stock Exchange
10. Financial Reports
11. Qualitative
12. Liquidation
13. Window dressing
14. Historical Cost
15. B
16. C
17. B
18. A
19. B
20. D

Terminal Questions

1. Accounting process is discussed in section 1.3.
2. Accounting helps in systematic recording of all business event or transactions. Refer 1.4.
3. Accounting is a profession whereas the book keeping is the basic activity of recording. Refer 1.5.
4. Accounting reports are designed to meet the common information needs of most decision makers. Refer 1.6.
5. Government and the regulatory agencies require information to regulate the activities of an enterprise Refer 1.6.

1.13 Case Study

Infosys Technologies Limited – Financial Highlights
The following data is available about Infosys Technologies Limited Five Year India GAAP (Consolidated Basis)

P and L Data *(in Rs. Crore)*

Particulars	2010-11	2009-10	2008-09
Revenue	27,501	22,742	21,693
Operating Profit (PBIDT)	8,968	7,861	7,195
Interest	-	-	-
Depreciation and Amortisation	854	905	761
Provision for taxation	2,490	1,681	919
PAT from ordinary activities	6,835	6,218	5,988
Dividend (inc dividend tax)	4,013	1,674	1,573

P and L Ratios

Particulars	2010-11	2009-10	2008-09
Export revenue/Total revenue (%)	97.66	98.73	98.72
Software dev expenses/Total revenue (%)	56.20	54.68	55.00
Gross Profit/Total revenue (%)	43.80	45.32	45.00
Selling and marketing expenses/ Total revenue (%)	4.80	4.61	4.60
General and administration expenses/ Total revenue (%)	5.85	5.90	6.32
Aggregate employee costs/Total revenue (%)	49.08	48.96	49.20
Operating profit (PBIDTA)/Total revenue (%)	33.15	34.82	34.08
Operating profit after depreciation and interest/Total revenue (%)	30.23	31.00	30.66
Depreciation and amortisation/ Total revenue (%)	2.92	3.82	3.42
Tax/Total revenue (%)	9.37	8.12	4.42
Profit after tax/Total revenue (%)	25.38	27.22	28.72
ROCE (%)	37.58	37.25	42.90
Return on invested capital (%)	67.73	68.75	78.84

Growth Ratios

Particulars	2010-11	2009-10	2008-09
Export revenue (%)	18.78	4.33	29.65
Total revenue (%)	20.08	4.32	29.50
Operating profit before depreciation (%)	14.32	6.57	39.15
Net profit before exceptional item (%)	11.95	(1.10)	30.18
EPS before exceptional item (%)	11.85	(1.26)	29.92

Balance Sheet Data *(in Rs. Crore)*

Particulars	2010-11	2009-10	2008-09
Share Capital	287	287	286
Reserves and Surplus	24,214	21,749	17,523
Gross Block	6,934	6,357	5,986
Investments in liquid MFs and certificates of deposit	119	3,507	-
Net Current Assets	18,391	13,131	12,288
Total assets			

Balance Sheet Ratios

Particulars	2010-11	2009-10	2008-09
Debt-equity ratio	-	-	-
Debtors revenue (days)	61	56	61
Current ratio	5.22	4.46	4.72
Cash and equivalents/Total assets (%)	61.94	66.48	57.65
Cash and equivalents/Total revenue (%)	60.21	70.03	50.78

Per Share Data

Particulars	2010-11	2009-10	2008-09
No. of shares for EPS	57,40,13,650	57,33,09,523	57,24,90,211
EPS from ordinary act-Basic	112.26	100.37	101.65
Dividend per share	30*	25.00	23.50
Book Value	426.73	384.01	310.90

(Source: http://www.infosys.com)

Discussion Questions:

1. Which of the above information would you be more interested if you were to be a prospective investor? How would you use the above data? Is there any other information you would look for?
2. Which of the above information would you be more interested if you were to be a security analyst? How would you use the above data? Is there any other information you would look for?

Hint to case study

1. The prospective or present investors would be more interested in per share data. All the ratios are showing good trends. So the company is fundamentally strong and good for investing for long term. However, the investor also needs to watch the market price of the share in order to decide the timing of purchase or sale. That is, the price at which to purchase or sell the share.
2. A security analyst would do a more detailed analysis. The analyst would look into the details of the above information or ratio from the financial statements of the company and the accounting policies adopted by the company. The analyst would also look into the qualitative information about the company like that given in the Annual Report of the company under the various components like Directors' Report, Auditors' Report, and Management Discussion and Analysis.

References:

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Unit 2 Accounting Concepts, Principles, Bases, and Policies

Structure:

2.1 Introduction
  Objectives
2.2 Generally Accepted Accounting Principles
2.3 Accounting Concepts
  Business separate entity concept
  Going concern concept
  Money measurement concept
  Periodicity concept
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2.4 Accounting Conventions
  Convention of income recognition
  Convention of matching cost and revenue
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  Convention of conservatism or prudence
2.5 Accounting Policies
  Changes in accounting policies
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  Objectives of IFRS
  Scope of IFRS
  List of IFRS
2.8 Summary
2.9 Glossary
2.10 Terminal Questions
2.11 Answers
2.12 Case study

2.1 Introduction

In the previous unit, we discussed the meaning and objectives of accounting, the accounting process, and the distinction between book-keeping and accounting. However, accounting is based on certain postulates, concepts, and policies. In this unit, we will understand the concepts, principles, and policies of accounting. We will also focus on a brief introduction to Accounting Standards issued by Accounting Standards Board of ICAI and International Financial Reporting Standards (IFRS).

Objectives:

After studying this unit, you should be able to:

- explain the meaning of GAAP and enumerate its components
- define the accounting concepts, principles, policies, and standards
- explain the different accounting concepts and principles and their implications on financial statements
- describe the major considerations governing accounting policies
- define the scope and functions of Accounting Standards
- state the meaning and objectives of IFRS

2.2 Generally Accepted Accounting Principles (GAAP)

Accounting information is used by various stakeholders. The stakeholders need to understand the accounting language and also the principles, concepts, and policies based on which the financial statements have been prepared.

Accounting principles

Accounting principles are the basic rules of action, which are adopted by the accountants while recording accounting transactions and in preparing and presenting financial statements. The principles are doctrines associated with theory and procedures and current practices of accounting.

GAAP are the accounting principles that are accepted universally by accountants, professional accounting bodies, and business entities across the world. GAAP consists of two components.

- The accounting concepts
- The accounting conventions

These are explained below.

Accounting concepts

These are basic or fundamental assumptions or conditions, which guide the accountants while preparing accounting statements. These concepts are so basic that most accountants do not consciously think of them; they are regarded as being self-evident. They are also called Postulates of Accounting.

Example: A business is started with an assumption that it shall continue for a long period of time and none of the stakeholders would wish the business to close down within a short period of time.

Based on this assumption, businesses purchase fixed assets, use long term source to fund the fixed assets, etc. This strong assumption that the business will continue for a long period of time is called as the going concern concept.

Accounting conventions

Conventions are those customs and traditions that guide the accountants while preparing the financial statements.

Example: Inventory (stock) in a business is valued at the end of an accounting period, at either cost or market price, whichever is lower. This is an accepted convention or a practice in accounting.

Though the concepts and conventions are fundamentally the same, there may be some differences in the methodology or practice from one region to another. Hence the GAAP is identified with a region. For example, the accounting principles accepted and followed in the US and the surrounding regions came to be identified as US GAAP, the accounting principles accepted and followed in Japan and the surrounding regions came to be identified as Japanese GAAP, the accounting principles accepted and followed in India and the surrounding regions came to be identified as Indian GAAP, the accounting principles accepted and followed in China and the surrounding regions came to be identified as Chinese GAAP, etc. Of all the GAAP, the US and the Chinese GAAP are known to be the most conservative.

Figure 2.1 summarises the relationship between accounting principles, accounting concepts, and accounting conventions.

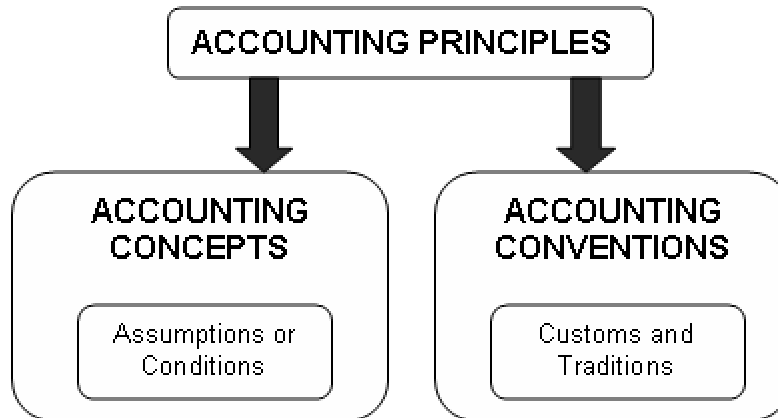

Figure 2.1: Relationship Between Accounting Principles, Accounting Concepts, and Accounting Conventions

Self Assessment Questions

1. Accounting principles are _______ associated with theory and practice of accounting.
2. Accounting principles are classified as ________ and ________.
3. A business is started with an assumption of making profit. Is this assumption a concept or a convention?
4. The purpose of establishing ICAI and ASB is to ________.
5. How many accounting standards are issued by ASB so far?

2.3 Accounting Concepts

As mentioned earlier, accounting concepts are the basic conditions or assumptions upon which the science of accounting is based. There are five basic concepts of accounting, namely – business entity concept, (separate entity concept), going concern concept, money measurement concept, periodicity concept, and accrual concept. These are explained in Figure 2.2.

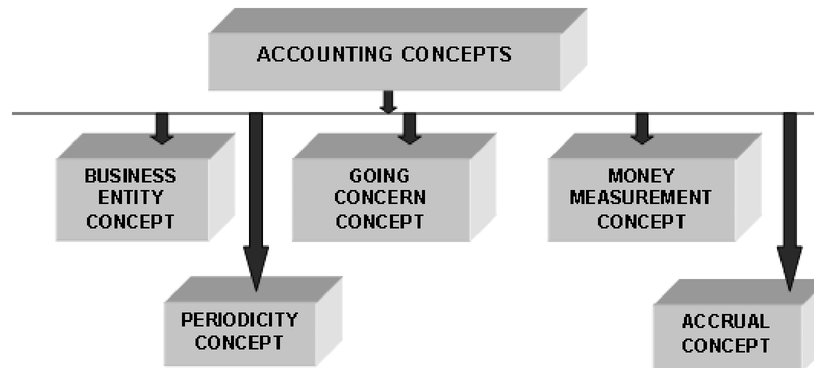

Figure 2.2: Basic Concepts of Accounting

Let us now study the concepts in detail.

2.3.1 Business separate entity concept

This concept states that business is a separate entity and it is different from the proprietor or the owner. In this concept a company can own assets and incur liabilities in its own name. This separation not only has important legal implication but also has an accounting implication. This enables the business to segregate the transactions of the company from the private transactions of the proprietor(s). It distinguishes between the personal assets and liabilities of the owners with that of the business.

Example: Personal bank account of the proprietor, cash withdrawal from business for private purpose should be accounted separately.

This legal separation between business and ownership is kept in mind while recording the transactions in the books of business.

Self Assessment Questions

6. If the household expenses of Rs. 25,000 of a proprietor are shown as business expenses, the profit of the business will be understated to the extent of Rs. 25,000. (True/False)
7. If a proprietor invests Rs.1,00,000 in business, it is deemed that the proprietor has given Rs.1,00,000 to the ‘business’ and it is shown as an asset in the books of the business. (True/False)
8. Business and its owner are ________________ entities.
9. Profits earned in business form an addition to the ______________ of the owner.

2.3.2 Going concern concept

In this concept the business entity will continue fairly for a long time to come. It assumes that there is neither the necessity nor the intention to close down either the entire business or substantial operations of the business.

Self Assessment Questions

10. Classification of assets as current and fixed assets is the application of going concern concept. (True/False)
11. Why compliance of AS 1 need not be disclosed in the financial statement?
12. When the government declares a company sick the concept of going concern is not valid. (True/False)

2.3.3 Money measurement concept

All transactions of a business are recorded in terms of money.

This concept is basically concerned with the problem of measuring the value of transactions. Certain transactions are either already expressed in terms of money or easily measured in terms of money. For example, cost of inputs, prices of assets, etc. Other assets or transactions that are difficult to measure and express in terms of money are ignored. For example, value of the brand, intelligence of people, etc.

Activity 1:

Give three transactions that are expressed in monetary terms:

1. ____________________
2. ____________________
3. ____________________

Give three transactions that are not expressed in monetary terms:

1. ____________________
2. ____________________
3. ____________________

Self Assessment Questions

13. Inflation or changes in the purchasing power are ignored in money measurement concept. (True/False)
14. Apple Inc. had announced that its CEO Steve Jobs was on an unexpected period of absence due to ill health. We know that Steve Jobs involvement in the success of the company's products and services are critical. Can this event be monetised? (True/False)

2.3.4 Periodicity (accounting period) concept

As per the going concern concept, the life of business is indefinite. This makes it difficult to wait indefinitely to stop and look back at how the company performed and also makes it too late to take corrective actions if any. Hence, the indefinite life of business is split into regular intervals of time. Such regular time intervals are called accounting periods.

2.3.5 Accrual concept

The following are the features of this concept:

- Expenses incurred for an accounting period must be recorded in that accounting period regardless of whether it is actually paid in that accounting period or not.
- Income earned for an accounting period must be recorded in that accounting period regardless of whether it is actually received in that accounting period or not.

Example: On 31st December, 2006, interest receivable on fixed deposit was Rs. 12000. The interest amount was credited to a bank account in February 2007 (two months later). According to accrual concept, the income from interest is Rs.12000 though it is received after 31st December, 2006.

Self Assessment Questions

15. Interest earned but not received within an accounting period is called _______.
16. Accrued income should be _________ to compute profit and prepaid expenses should be _____ according to accrual concept of accounting.
17. Accrual concept considers not only cash transactions but also ______ transactions.

2.4 Accounting Conventions

Accounting conventions are the rules based on which accounting takes place and these rules are universally accepted. There are ten types of accounting conventions, namely convention of income recognition, convention of expense, convention of matching cost and revenue, convention of historical cost, convention of full disclosure, convention of double aspect, convention of modifying, convention of materiality, convention of consistency, and convention of conservatism. They are explained briefly in the following sections.

2.4.1 Convention of income recognition

According to this concept, revenue is considered as being earned on the date on which it is realised, i.e., the date on which goods and services are transferred to customers for cash or for promise.

- A sale is considered to be made when the property in goods (ownership) is transferred from the seller to buyer.
- In case of services, revenue is said to be earned when the service has been delivered.

Self Assessment Questions

18. Income is considered as earned only when it is ____________.
19. Income is realised whether it is actually received in cash or promised to be received. (True/False)
20. Income realised is different from cash received. (True/False)
21. A sale is made on credit. Does it constitute income realisation?
22. An order is received for sale of goods. Is it realisation of income?
23. An order is received with an advance of Rs.1,00,000 cash. Can this be called income?

2.4.2 Convention of matching cost and revenue

According to this concept, revenue earned during a period is compared with the expenditure incurred to earn that income, irrespective of whether the expenditure is paid during that period or not. This is also called matching cost and revenue principle.

- Sales revenue in 2010 – Rs. 50,00,000
- Expenses incurred during the year – Rs. 30,00,000
- Expenses actually paid during the year – Rs.29,00,000
- Rs.1,00,000 though not paid, is still debited to the profit and loss account of 2010.

While preparing the final accounts, adjustments are made for outstanding expenses, prepaid expenses, outstanding income, and income received in advance.

Self Assessment Questions

24. Matching concept of accounting considers only revenue incomes and expenses relating to a particular accounting period. (True/False)
25. Income and expenses for an accounting period are considered to compute _____.
26. Expenditure paid or payable and revenue earned whether realised or not in cash are taken into account to find out profit or loss. (True/False)

2.4.3 Convention of historical costs

This convention says that all transactions must be recorded at a value at which they were incurred. Such a value is called 'Historical Cost' and this principle is called the Convention of 'Cost'. An asset or transaction may have many other values associated with it like market value or replacement cost. But all assets are recorded at the cost of acquisition and this cost is the basis for all subsequent accounting for the assets. The expenses and the goods purchased are shown at the value at which they are incurred.

Example: Land bought for Rs. 5,00,000 will be shown at purchase price irrespective of the market value.

Self Assessment Questions

27. All assets are shown at historical cost in the balance sheet. (True/False)
28. Depreciation is charged against the historical cost of assets. (True/False)
29. Historical cost is the cost at which an asset is actually purchased. (True/False)

30. Machinery is bought for Rs. 2,00,000 and its market value is Rs.80,000. Which of these values do you mention in the balance sheet according to cost principle?

2.4.4 Convention of full disclosure

This convention requires a business to disclose the following:

- All the accounting policies adopted in the preparation and presentation of financial statements.
- If there is any change in the accounting policies in the current year as compared to the previous year/s, the effects of such changes and the reason/s thereof.
- The implications (in terms of money value) on the financial statements due to such change.

Self Assessment Questions

31. Non-disclosure of material information amounts to ___________.
32. Disclosing about assets without disclosing about liabilities is against the principle of full disclosure. (True/False)

2.4.5 Convention of double aspect

This concept states that every transaction has two aspects. One is the receiving aspect and the other is the giving aspect. In accounting language, these two aspects are called 'debit' and 'credit'.

The claims on assets will always be equal to the assets. The claims on assets may be of the owners or of the outsiders (creditors). While the claims of owners are called Equity or Capital, the claims of outsiders are called Liabilities. Therefore, total liabilities are equal to total assets. This concept gives rise to the balance sheet equation, i.e., Assets=Liabilities + Capital.
The following balance sheet illustrates this.

BALANCE SHEET as on ……..

Liabilities	Rs.	Assets	Rs.
Capital	1,20,000	Land	1,00,000
Bank loan	60,000	Building	80,000
	20000		**1,80,000**

From the above balance sheet it is clear that the firm has total assets worth Rs. 1,80,000. Owners have a claim on these assets to the extent of Rs.1,20,000, while the outsiders' claim on these assets is Rs. 60,000.

This concept is also the basis for the established principle of accounting that for every debit there is an equivalent credit.

Self Assessment Questions

33. Under dual aspect principle, total benefits received by business should match the total benefits given. (True/False)
34. Total liabilities should be equal to ____________ as per dual aspect principle.
35. For every debit, there should be an equivalent credit. This is called __________ of accounting.

2.4.6 Convention of materiality

This convention states that the benefit derived from measuring, recording, and processing a transaction should justify the cost of doing it.

2.4.7 Convention of consistency

This convention requires that the accounting policies must be consistently applied year after year. Consistency is required to help comparison of financial data from one period to another. Once a method of accounting is adopted, it should not be changed. A change in an accounting policy may be done only when:

- It is required by law
- It is felt that the new policy reflects the financial performance or position better than the old policy

Such changed policy must be consistently applied for the subsequent periods. As stated under the full disclosure convention, the change in the accounting policy along with the reason/s and the financial implications on the financial statements should be disclosed to the users.

Self Assessment Questions

36. The purpose of principle of consistency is to help ______ from one period to another period.
37. Consistency principle helps for proper assessment of profit or loss. (True/False)

2.4.8 Convention of conservatism or prudence

Accountants follow the rule "**anticipate no profits but provide for all anticipated losses**". Whenever loss is anticipated, sufficient provisions should be made. But if a profit is anticipated, it should not be recorded until it is actually realised.

Self Assessment Questions

38. Provision should be made whenever _____________ is anticipated.
39. The underlying spirit of principle of conservatism is __________.
40. State the relevant accounting principle for the following statements.
    a. Following FIFO method of stock valuation year after year
    b. Appending notes to the financial statements
    c. Anticipating no profit but providing for all probable losses

2.5 Accounting Policies

It refers to specific accounting principles and methods of accounting adopted by enterprises while preparing and presenting the financial statements. The management of each enterprise has to select appropriate accounting policies based on the nature and circumstances of their business. Some of the areas in which different accounting policies may be adopted are:

- Methods of depreciation, amortisation
- Treatment of expenditure during construction
- Conversion or translation of foreign currency items
- Valuation of inventories
- Treatment of goodwill
- Valuation of investments
- Treatment of retirement benefits
- Recognition of profit on long-term contract
- Valuation of fixed assets
- Treatment of contingent liabilities

The major considerations governing the selection and application of accounting policies are:

- ***Prudence –*** Uncertainties are a fact and they are inevitable. This should be recognised by exercising prudence in preparing financial statements.

- ***Substance over form* –** Transactions and events should be accounted for and presented in accordance with their substance and financial reality and not merely with their legal form.
- ***Materiality* –** Financial statement should disclose all material items which might influence the decision of the users of the financial statement.

2.5.1 Change in accounting policies

The change in accounting policies is recommended only in the following circumstances:

1. If it is required by statute for compliance with an accounting standard.
2. If it is considered that the change would result in a more appropriate presentation of the financial statements of an enterprise.

2.5.2 Disclosure in case of change in accounting policy

In case of any changes in the accounting policies, the following must be disclosed:

- If the change has a material effect in current period and the effect of change is ascertainable, the amount of change should be disclosed.
- If the change has a material effect in current period and the effect of change is not ascertainable wholly or in part, the fact should be disclosed.
- If the change has no material effect in current period but is reasonably accepted to have a material effect in later periods, the fact of such change should be appropriately disclosed.

2.5.3 Mandatory and voluntary disclosures

The disclosures required by the statutory bodies, government or regulatory bodies or accounting standards are called mandatory disclosures. This is the minimum disclosure that a company must and should give.

However, over and above the mandatory disclosures, the company may give additional disclosures. These are called voluntary disclosures. These days the tendency is to give maximum possible information to the users to ensure transparency and build confidence among the users. Hence, most of the companies provide a lot of information in their annual reports and on their websites

Activity 2:

Visit the websites of one or two companies like Infosys or HDFC Bank and take a cursory look at their Annual Report. Focus on Accounting Policies.

2.6 Accounting Standards

As explained earlier (section 2.2), there are divergences in GAAPs of different regions. This renders the financial statements of such regions incomparable. Presently, businesses have become large, globalised, and have stake holders across the globe. Therefore, the need to have uniformity in the preparation and presentation of financial statement has given rise to accounting standards.

An accounting standard is a selected set of accounting policies or broad guidelines regarding the principles and methods to be chosen out of several alternatives. Standards adhere to certain laws, customs, usage, and business environment in which they operate.

The basic purpose of accounting standards is to harmonise the diverse accounting policies and practices. The adoption of accounting standards ensures uniformity, comparability, and qualitative improvement in the preparation and presentation of financial statements. Accounting standards facilitates more disclosure of financial information that is beyond the statutory limits.

The earliest attempt towards harmonisation of accounting practices at the international level was made by the International Accounting Standards Committee (IASC). IASC was formed in 1973 to come out with the statements of standard accounting practices intended to be adopted by corporate sector across the globe. Such statements of standard accounting practices issued by the Board of IASC are called International Accounting Standards (IAS). IAS were issued by the IASC from 1973 to 2000.

The International Accounting Standards Board (IASB) replaced the IASC in 2001. Since then, the IASB has amended some IAS and has proposed to amend others. IASB has also replaced some IAS with new International Financial Reporting Standards (IFRS), and has adopted or proposed certain new IFRS on topics which had no previous IAS.

Most of the countries also have their own Accounting Standards (AS). In India, the Institute of Chartered Accountants of India (ICAI) established Accounting Standards Board (ASB) in 1977. There are altogether 32 AS issued by ASB.

Of the 32, some are recommendatory (optional) in nature while others are mandatory (compulsory).

Annexure 1, given at the end of this unit provides the details of 32 AS

2.6.1 Scope and functions of ASB of ICAI

The ASB was constituted by the ICAI on 21st April, 1977. The aim of the board was to bring in uniformity among various accounting policies and practices that are practised in India.

To determine the broad areas in which accounting standards need to be formulated, the board holds a dialogue with various representatives of the government, industry, and other organisations to ascertain their views. On the basis of the discussions they hold, the board prepares and issues a draft proposal for comments by the members of the institute and the public.

After modification (if any), a final draft is submitted to the council of the institute. The accounting standard will then be issued under the authority of the council. At present, there are 32 accounting standards issued by the council.

2.7 International Financial Reporting Standards (IFRS)

IFRS are standards, interpretations, and framework for the preparation and presentation of financial statements. IFRS are issued by International Accounting Standards Board (IASB).

2.7.1 Objectives of IFRS

The objectives of IFRS as given by IASB are reproduced below :

- To develop a set of high quality, understandable, and enforceable global accounting standards that require high quality, transparent, and comparable information in financial statements and other financial reporting. Such information will help participants in the world's capital markets and other users to make economic decisions.
- To promote the use and rigorous application of those standards.

- To fulfil the objectives associated with (1) and (2), taking into account, the special needs of small and medium-sized entities and emerging economies.
- To bring about convergence of national accounting standards, IAS and IFRS to high quality solutions.

2.7.2 Scope of IFRS

IASB Standards are known as IFRS.

The scope of IFRS as given by IASB are reproduced below:

- All IAS and Interpretations issued by the former IASC and Standard Interpretation Committee (SIC) continue to be applicable unless and until they are amended or withdrawn.
- IFRS apply to the general purpose financial statements and other financial reporting by profit-oriented entities – those engaged in commercial, industrial, financial, and similar activities, regardless of their legal form.
- Entities other than profit-oriented business entities may also find IFRS appropriate.
- General purpose financial statements are intended to meet the common needs of shareholders, creditors, employees, and the public at large for information about an entity's financial position, performance, and cash flows.
- Other financial reporting includes information provided outside financial statements that assists in the interpretation of a complete set of financial statements or improves users' ability to make efficient economic decisions.
- IFRS apply to individual company and consolidated financial statements.
- A complete set of financial statements includes a balance sheet, an income statement, a cash flow statement, a statement showing either all changes in equity or changes in equity other than those arising from investments by and distributions to owners, a summary of accounting policies, and explanatory notes.
- If an IFRS allows both a 'benchmark' and an 'allowed alternative' treatment, financial statements may be described as conforming to IFRS whichever treatment is followed.

- In developing standards, IASB intends not to permit choices in accounting treatment. Further, IASB intends to reconsider the choices in existing IAS with a view to reduce the number of those choices.
- IFRS will present fundamental principles in bold face type and other guidance in non-bold type (the 'black-letter'/'grey-letter' distinction). Paragraphs of both types have equal authority.
- The provision of IAS 1 that conformity with IAS requires compliance with every applicable IAS and Interpretation requires compliance with all IFRS.

2.7.3 List of IFRS

The following is a list of IFRS.

- ***IFRS 1* –** First-time adoption of IFRS
- ***IFRS 2* –** Share-based payment
- ***IFRS 3* –** Business combinations
- ***IFRS 4* –** Insurance contracts
- ***IFRS 5* –** Non-current assets held for sale and discontinued operations
- ***IFRS 6* –** Exploration for and evaluation of mineral assets
- ***IFRS 7* –** Financial instruments: disclosures
- ***IFRS 8* –** Operating segments
- ***IFRS 9* –** Financial instruments

2.8 Summary

Let us recapitulate the important concepts discussed in this unit:

- Accounting principles are the rules of action adopted by the accountants universally while recording accounting transactions.
- Accounting conventions are those customs and traditions that guide the accountants while preparing the financial statements.
- Accounting concepts are the basic assumptions or conditions upon which the science of accounting is based. There are five basic concepts of accounting, namely – business entity concept (separate entity concept), going concern concept, money measurement concept, periodicity concept, and accrual concept.

- Accounting policy refers to the specific accounting principles and methods of applying those principles adopted by the enterprise in the preparation and presentation of financial statements.
- An accounting standard is a selected set of accounting policies or broad guidelines regarding the principles and methods to be chosen out of several alternatives. There are altogether 32 accounting standards issued by ASB. Companies are required to make disclosures of accounting policies in their annual report.

2.9 Glossary

Consistency: Being stable in using accounting policies.

Conservatism: Being prudent in identifying profit and loss.

Disclosure: Providing all important information to the users of information.

Historical cost: Cost at which a transaction is incurred.

2.10 Terminal Questions

1. What are the basic principles of accounting?
2. The salaries paid in 2004 is Rs. 5,00,000; Salaries outstanding is Rs. 20,000; Salaries paid in advance for 2004 is Rs. 30,000. What is the actual salary expenditure for 2004? Which accounting principle is involved in this?
3. What is wrong if assets like buildings are shown at market value in the balance sheet?
4. A business receives capital of Rs. 1,00,000 and a loan is raised for Rs. 50,000. This is represented by cash Rs.15,000; machinery Rs. 85,000; furniture Rs. 20,000, and goods Rs. 30,000. Find the total of debits and credits from business point of view. Which accounting principle is involved in this?
5. What is substance over form?

2.11 Answers

Self Assessment Questions

1. Doctrines
2. concepts, conventions

3. Concept
4. Form accounting standards
5. 32
6. True
7. False
8. Separate
9. Capital
10. True
11. Acceptance and use is assumed
12. False
13. False
14. No
15. Accrued
16. Added, deducted
17. Credit
18. Realised
19. True
20. True
21. Yes
22. No
23. No
24. True
25. Profit
26. True
27. True
28. True
29. True
30. Rs. 200000
31. Fraud
32. True
33. True
34. Total Assets
35. Double entry principle
36. Comparison

37. True
38. Risk
39. Anticipate no profit but provide for all anticipated losses
40. a. Principles of consistency
    b. Principles of full disclosure
    c. Principles of conservatism

Terminal Questions

1. Income recognition, principle of expense, matching of cost and revenue, historical cost principle, full disclosure principle, double aspect principle, modifying principle, materiality principle, consistency principle and conservatism principle.
2. Rs. 490000 (500000 + 20000 – 30000); Matching cost and revenue principle.
3. If assets like building are shown at market value instead of historical cost in the balance sheet, the profit or loss arising out of such valuation is against to the principle of income recognition. The profit or loss is said to arise only when the asset is sold or revalued for a specific purpose. The day when the assets are valued, the market value may be high and later the prices may fall. Therefore it is wrong to consider the unrealised or anticipated profit. Hence the assets should be shown at historical cost in the balance sheet.
4.

Liabilities		**Assets**	
Capital	100000	Cash	15000
Loan	50000	Machinery	85000
		Furniture	20000
		Goods	30000
Total	150000	Total	150000

It is as per double aspect principle.

5. Transactions and events should be accounted for and presented in accordance with their substance on financial reality and not with their legal forms. Refer unit 2.5.

2.11 Case Study

Infosys Technologies

Following are some extracts from the annual report of Infosys Technologies Ltd, from the section "Significant accounting policies and notes on accounts" pertaining to disclosure of accounting policies adopted by them.

13.2.1 Capital commitments and contingent liabilities

1. The estimated amount of contracts remaining to be executed on capital account, and not provided for (net of advances) is Rs. 1,21,56,43,540 as on 30th September, 2000. The amount of such contracts as on 30th September, 1999 was Rs. 61,66,53,437 and as on 31st March , 2000 was Rs. 80,31,29,007.
2. The company has outstanding guarantees and counter guarantees of Rs. 6,51,30,000 as on 30th September , 2000, to various banks, in respect of the guarantees given by the banks in favour of various government authorities and a customer. The guarantees and counter guarantees outstanding as on 30th September , 1999 were Rs.1,58,84,263 and as on 31st March, 2000 were Rs. 5,26,30,000.
3. Claims against the company, not acknowledged as debts, amounted to Rs. 8,75,532 as on 30th September, 2000. Such claims, as on 30th September, 1999 were Rs. 17,91,814 and as on 31st March, 2000 were Rs. 32,89,661.

13.2.11 Provision for contingencies

The company had instituted a contingency plan effective 1st October, 1998 and made a total provision of Rs. 9,99,00,000 to meet any possible disruption in client support due to the year 2000 impact on the technology and communication infrastructure provided to the company by its vendors. For the year ended 31st March, 2000, Rs. 2,42,29,154 was spent towards the year 2000 transition effort, which was set off against the provision and the remainder of Rs. 7,56,70,846 was written back to the profit and loss account.

(Source: Infosys Technologies Ltd)

Discussion Questions:

1. Why do you think these disclosures are important?
2. What is the implication of the matter stated in these disclosures on the reported profit of the company?
3. What is the implication of the matter stated in these disclosures on the reported financial position of the company?

Hint to Case Study

1. The matter stated in these disclosures may have implication on the reported profit and the reported financial position of the company. Therefore it is important to make these disclosures.
2. Contracts remaining to be executed: profit may reduce or increase after completion.

   Year 2000 transition: The expenses related to this are an abnormal item. The company may have additional payments on account of this.
3. Outstanding guarantees and counter guarantees: Payment to the extent stated there in may devolve on the company.

   Claims against the company, not acknowledged as debts: Payment to the extent stated there in may devolve on the company.

Reference:

- Maheshwari S.N, Maheshwari S.K., Advanced Accounts – Vol 1

E-References:

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- www.infosys.com – retrieved on December-21st 2011

ANNEXURE 1

ACCOUNTING STANDARDS

AS No.	Title	Recommended 0r Mandatory	Mandatory from accounting period beginning on or after
AS-1	Disclosure of Accounting Policies	Mandatory	1.4.1991
AS-2	Valuation of Inventories	Mandatory	1.4.1999
AS-3	Cash Flow Statement	Mandatory	1.4.2000
AS-4	Contingencies and events occurring after the Balance Sheet date (revised)	Mandatory	1.4.1995
AS-5	Prior Period and extraordinary items and changes in Accounting Policies	Mandatory	1.1.1987
AS-6	Depreciation Accounting (revised)	Mandatory	1.4.1995
AS-7	Accounting for construction contracts	Mandatory	1.4.1991
AS-8	Accounting for Research and Development	withdrawn	
AS-9	Revenue Recognition	Mandatory	1.4.1991
AS-10	Accounting for Fixed Assets	Mandatory	1.4.1991
AS-11	Accounting for the effects of changes in foreign exchange rates (Revised)	Mandatory	1.4.1995
AS-12	Accounting for Government Grants	Mandatory	1.4.1994
AS-13	Accounting for Investment	--------	-------
AS-14	Accounting for Amalgamation	Mandatory	1.4.1995
AS-15	Accounting for retirement benefits in the financial statement of employers	Mandatory	1.4.1995
AS-16	Borrowing Costs	Mandatory	1.4.2000
AS-17	Segment Reporting	Mandatory	1.4.2001
AS-18	Related party disclosure	Mandatory	1.4.2001
AS-19	Leases	Mandatory	1.4.2001

AS-20	Earnings Per Share	Mandatory	1.4.2001
AS-21	Consolidated financial statement	Mandatory	1.4.2001
AS-22	Accounting for taxes on income	Mandatory	1.4.2001
AS-23	Accounting for investments in associates in consolidated financial statements	Mandatory	1.4.2002
AS-24	Discontinuing operations	Mandatory	1.4.2002
AS-25	Interim financial reporting	Mandatory	1.4.2002
AS-26	Intangible assets	Mandatory	1.4.2003
AS-27	Financial reporting of interests in joint venture	Mandatory	1.4.2002
AS-28	Impairment of assets	Mandatory	1.4.2004
AS-29	Provisions, Contingent Liabilities & Contingent Assets	Mandatory	1.4.2004
AS-30	Financial Instruments: Recognition, Measurement and Limited Resources	Mandatory from 1.4.2011	1.4.2009
AS-31	Financial Instruments: Presentation	Mandatory from 1.4.2011	1.4.2009
AS-32	Financial Instruments: Disclosure and limited revision to AS 19 (leases)	Mandatory from 1.4.2011	1.4.2009

- AS 8 was withdrawn in pursuant to AS 26 becoming mandatory.
- 29 accounting standards are issued as of date and only 28 is applicable.
- AS 30, 31, 32 are published but they will come into effect from 1.4.2009. It is mandatory on or after 1.4.2011.

Unit 3 Double Entry Accounting

Structure:

3.1 Introduction
Objectives
3.2 Meaning of Double Entry Accounting
3.3 Classification of Accounts under Traditional Approach
3.4 Classification of Accounts under Accounting Equation Approach
3.5 Comparison of Traditional Approach with Modern Approach Equal Approach
3.6 Accounting Trail
3.7 Transactions and Events
3.8 Meaning and Rules of Debit and Credit
3.9 Journalising
3.10 Posting to Ledger
3.11 Accounting Equation
3.12 Summary
3.13 Glossary
3.14 Terminal Questions
3.15 Answers
3.16 Case Study

3.1 Introduction

In the previous unit, we dealt with accounting principles, concepts, policies, and accounting standards. All these give broad principles or guidelines for recording and communicating financial information. But we also need specific rules for doing this. Such specific rules are given by the principles of book-keeping. In this unit, we will discuss the meaning and significance of double entry accounting, the classification of accounts under traditional approach, and accounting equation approach. This classification is required because business entities may not be confined to the geographical boundaries of the nation. Accounting trail is a sequential order in which the accounting process flows. The eight process steps of accounting trail are discussed briefly in this unit. We will also discuss the rules of debit and credit on various types of accounts.

Objectives:

After studying this unit, you should be able to:

- define double entry book keeping
- classify different types of accounts under traditional approach and the accounting equation approach
- state the process involved in accounting trail
- explain the rules of double entry system of book-keeping
- pass journal entries in the journal

3.2 Meaning of Double Entry Accounting

We have learnt that dual aspect recording is the most important accounting concept. According to this concept, every business transaction involves a receiving aspect and giving aspect. A transaction is a business activity involving transfer of money or money's worth.

Double entry book-keeping system

Every account has the following two sides:

1) One account is the receiver of the benefit or the incoming aspect or the expenses/losses.
2) Other account is the giver of the benefit or the outgoing aspect or the profits/gains.

It must be noted that the amount of benefit received by one account is equal to the amount of benefit given by the other account. This enables us to record the two effects of any business transaction. If capital is brought in by the owner of a business, the owner is the giver of the benefit and the business is the receiver of the benefit. It is a liability of the business and it is equally balanced by an asset in the business in the form of cash received towards capital. Therefore every liability is represented by an asset. This is also expressed as 'every debit has an equivalent credit'.

Illustration 1: We shall consider five transactions and show how they are accounted for in the books of the business.

1. Mr. Abhi brings Rs.1,00,000 cash as capital into his business
2. He purchases furniture to his shop for Rs. 10,000
3. He buys goods for cash Rs. 50,000
4. He sells goods worth Rs. 30,000 for Rs. 40,000 on credit to Arjun
5. He pays wages to servants Rs.1,000

Transaction 1: The business receives capital in cash. Capital is a liability and cash is an asset to the business.

Liability		Asset	
Capital	100000	Cash	100000

Transaction 2: Furniture is purchased for cash. This transaction can be reflected as:

Capital	100000	Cash Rs. (100000-10000)	90000
		Furniture	10000
Total	100000	Total	100000

Transaction 3: Goods are purchased for cash. This can be reflected in the statement as:

Capital	100000	Cash Rs (90000–50000)	40000
		Furniture	10000
		Stock of goods	50000
Total	100000	Total	100000

Transaction 4: Goods are sold to Arjun on credit for Rs. 40000, the cost of which is only Rs. 30000. In this transaction, the affected accounts are Goods account, Arjun account, and Profit and Loss account. As the profit belongs to the owner it is fair to add it to the owner's capital. The effect of this transaction can appear on the statement as:

Capital	100000	Cash	40000
Profit	10000	Furniture	10000
		Stock of goods (50000-30000)	20000
		Arjun (Debtors)	40000
	110000		110000

Transaction 5: Payment of wages Rs.1000. The cash balance gets reduced in the asset side and profit gets reduced as a result of the expenditure (wages account) on the liability side. This changes the statement as:

Capital	100000	Cash (40000 – 1000)	39000
Profit (10000-1000)	9000	Furniture	10000
		Stock of goods	20000
		Arjun (debtors)	40000
	109000		109000

From the above illustrations, it is clear that every transaction has dual effect. Recording these aspects is the fundamental idea behind double entry system of book-keeping.

Self Assessment Questions

1. The system of recording transactions based on dual aspect concept is called
   a. Double account system
   b. Double entry system
   c. Single entry system
2. Show the dual aspect effect of the following transactions on the assets and liabilities of business.
   a. Purchased goods for cash Rs. 80000
   b. Purchased delivery van on credit for Rs. 400000
   c. Paid Rs. 5000 to a supplier of goods on credit
   d. Withdrew Rs. 20000 from the bank account of business for personal expenses

3.3 Classification of Accounts under Traditional Approach

There are three types of accounts, namely personal accounts, real accounts, and nominal accounts.

Personal Account	These are accounts of persons like creditors, debtors, bank account, outstanding or prepaid accounts

Real Account	These are accounts of assets. Asset may be tangible and intangible
Nominal Account	These are accounts of expenses, losses, incomes, and gains

Personal account

Personal account may be of three types as shown in figure 3.1.

Figure 3.1: Three Types of Personal Accounts

Real account

Real accounts may be tangible or intangible. Tangible real accounts relate to things that can be touched, felt, and physically measurable. Building account, furniture account, stock account, cash account, etc. are tangible real accounts. Intangible real accounts are such that they cannot be seen or touched. They can be measured in terms of money such as goodwill, patent rights, etc.

Nominal accounts

The examples of nominal accounts are:

- Salary, rent, etc (expenses)
- Loss on sale of assets or investments (losses)
- Sales, interest earned (incomes)
- Profit on sale of assets or investments (gains)

3.4 Classification of Accounts According to Accounting Equation Approach

Accounting equation approach classifies different types of accounts into assets account, liabilities account, capital account, revenue account, and expenses account.

Types of Accounts	Meaning	Examples
Asset account	Deals with tangible and intangible real assets	Land account, building account, plant and machinery account, cash account, goodwill account, trademark account, patents account, investments account
Liabilities account	Deals with the financial obligations of the firm on outsiders	Long term loans, debentures, bank loans, trade creditors, outstanding expenses
Capital account	Deals with accounts of the owners of the company	Capital account, drawings account
Revenue account	Deals with the amount charged for goods sold or service rendered, and other incomes	Sales account, royalty received account, interest received account, dividend received account
Expenses account	Deals with expenses incurred in the process of earning revenue	Purchases account, discount allowed account, interest paid account, loss by fire account

3.5 Comparison of Traditional Approach with Modern Approach or Accounting Equation Approach

Traditional approach	Modern approach
Personal account • (other than those related to owners) having debit balance • (other than those related to owners) having credit balance • Those relating to owners	• Asset a/c • Liabilities a/c • Capital a/c
Real account	• Asset a/c
Nominal account • Related to expenses • Related to revenue	• Expenses a/c • Revenue a/c

Illustration 2:

Classify the following accounts according to Traditional and Modern approach.

1. Capital account	2. Drawings account	3. Building
4. Purchases account	5. Sales account	6. Carriage inward
7. Carriage outward	8. Cash	9. Goodwill
10. Interest paid	11. Interest received	12. Commission paid
13. Commission received	14. Discount allowed	15. Conveyance charges
16. Sales promotion expenses	17. Entertainment expenses	18. Subscription paid
19. Subscription received	20. Light, power, and electricity	21. Telephone, postage, and telegram
22. Repairs incurred	23. Insurance premium paid	24. Bad debts written off
25. Bad debts recovered	26. Discount received	27. Postage and stationery purchased
28. Furniture	29. Bank account	30. Wages and salaries paid
31. Travelling expenses	32. Current account of the partner	33. Loan account of a partner
34. Sales return	35. Bank overdraft account	36. Loan account of the partner
37. Outstanding salaries account	38. Prepaid rent account	39. Interest accrued account
40. Interest received in advance		

Solution:

According to traditional approach:

Personal account	Real account	Nominal account
Capital account Drawings account Bank account Current account of the partner Loan account of a partner Bank overdraft account Outstanding salaries account Prepaid rent account Interest accrued account Interest received in advance	Building Cash Goodwill Furniture	Purchases Sales Carriage inward Carriage outward Interest paid Interest received Commission paid Commission received Discount allowed Conveyance charges Sales promotion expenses Entertainment expenses

		Subscription paid Subscription received Light, power, and electricity Telephone, postage, and telegram Repairs incurred Insurance premium paid Bad debts written off Bad debts recovered Discount received Postage and stationery purchased Wages and salaries paid Sales return

According to accounting equation or modern approach:

Asset account	Building, cash, goodwill, furniture, bank, prepaid rent, interest accrued
Liabilities account	Loan account of a partner, bank overdraft, outstanding salaries, interest received in advance
Capital account	Capital, drawings, current account of the partner
Revenue account	Sales, interest received, commission received, subscription received, bad debts recovered, discount received, sales return
Expenses account	Purchases, carriage inward, carriage outward, interest paid, commission paid, discount allowed, conveyance charges, sales promotion expenses, entertainment expenses, subscription paid, light, power, and electricity, telephone, postage, and telegram, repairs incurred, insurance premium paid, bad debts written off, postage and stationery purchased, wages and salaries paid

Self Assessment Questions

3. State Bank of India is a nominal account. (True/False)
4. Machinery is a real account. (True/False)
5. Life Insurance Corporation is a personal account. (True/False)
6. Proprietor's capital account is a personal account. (True/False)
7. Loan account is a real account. (True/False)
8. Postage and telegram account is a nominal account. (True/False)

3.6 Accounting Trail

Accounting trial is a sequential order in which the accounting process flows. All transactions are first recorded in a book called journal. The transactions are then posted to the respective accounts and maintained in a separate book called ledger. The ledger account balances are summarised to form a trial balance. From trial balance, trading account, profit and loss account, and balance sheet are prepared. Figure 3.2 depicts the process of accounting trail.

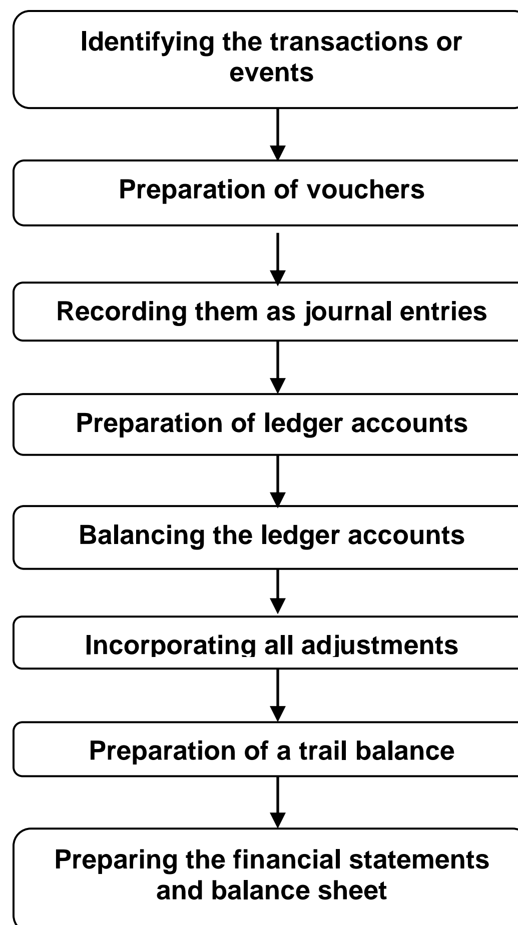

Figure 3.2: Process of Accounting Trail

Self Assessment Questions

9. Accounting trial is a process starting from identifying the transactions or events to preparing final statement of accounts. (True/False)
10. There are three types of accounts, namely ____________,_________, and ________________.
11. A trial balance is the summarised form of ledger balance. (True/False)

3.7 Transactions and Events

A transaction is a business activity involving transfer of money or money's worth. It may be cash transaction or credit transaction. In cash transaction cash flows immediately, where as in credit transaction cash will be paid or received at a future date. Assets acquired or sold, liabilities incurred or paid, expenses paid or payable, income received or receivable – are all business transactions. However, there are some events which are neither cash transactions nor credit transactions but have an impact on the financial position of a business. These events may include provision for bad debts, provision for repairs, depreciation, taxation, transfer of profit towards reserve fund or sinking fund or investment fluctuation fund, etc. Events happen as a result of internal policies or external needs. In accounting, transactions and events have equal relevance and they must be recorded to arrive at the financial results of the business concern.

Self Assessment Questions

12. A transaction is a business activity which involves transfer of money or money's worth. (True/False)
13. An event happens as a result of internal policy of an organisation. (True/ False)
14. Business transactions and events have equal importance in finding the financial results of the business concern. (True/False)
15. Identify whether the following are transactions or events.
    a. Depreciation of assets:___________
    b. Tax rates announcement:___________
    c. Acquisition of assets:___________
    d. Selling an asset:____________
    e. Transfer of profits to reserve fund:______________

3.8 Rules of Double Entry System of Book-Keeping

Debit and credit are the two basic words in accounting. Debit represents receiving aspect and credit represents giving aspect.

The rules of debit and credit when accounts are classified on traditional approach are as follows:

Type of account	Debit	Credit
Personal account	Receiver	Giver
Real account	What comes in	What goes out
Nominal account	Expenses and losses	Income and gains

The rules of debit and credit when accounts are classified on accounting equation basis are as follows:

Type of Account	Rules for Debit	Rules for Credit
Asset account	Debit the increase	Credit the decrease
Liabilities account	Debit the decrease	Credit the increase
Capital account	Debit the decrease	Credit the increase
Revenue account	Debit the decrease	Credit the increase
Expenses account	Debit the increase	Credit the decrease

Illustration 3: Analyse the following transactions according to traditional approach.

a. 1.1.2011 Subramanya started his business with cash Rs. 5,00,000
b. 2.1.2011 Borrowed from Mahesh Rs. 5,00,000
c. 2.1.2011 Purchased furniture Rs. 1,00,000
d. 4.1.2011 Purchased furniture from Mohan on credit Rs. 1,50,000
e. 5.1.2011 Purchased goods for cash Rs. 50,000
f. 6.1.2011 Purchased goods from Ram on credit Rs. 2,50,000
g. 8.1.2011 Sold goods for cash Rs. 1,25,000
h. 8.1.2011 Sold goods to Shyam on credit Rs. 55,000
i. 9.1.2011 Received cash from Shyam Rs. 25,000
j. 10.1.2011 Paid cash to Ram Rs. 90,000
k. 11.1.2011 Deposited into bank Rs. 5,00,000
l. 11.1.2011 Withdrew cash for personal use Rs. 10,000

m. 14.1.2011 Withdrew from bank for office use Rs. 50,000
n. 15.1.2011 Withdrew from bank for personal use Rs. 15,000
o. 15.1.2011 Received a cheque from a customer, Shyam at 5 p.m. Rs. 20,000
p. 16.1.2011 Deposited Shyam's cheque next day
q. 18.1.2011 Bank intimated that Shyam's cheque was dishonoured
r. 19.1.2011 Paid Ram by cheque Rs. 1,50,000
s. 20.1.2011 Paid salary Rs. 30,000
t. 20.1.2011 Paid rent by cheque Rs. 8,000
u. 21.1.2011 Goods withdrawn for personal use Rs. 5,000
v. 25.1.2011 Paid an advance to suppliers of goods Rs. 1,00,000
w. 26.1.2011 Received an advance from customers Rs. 3,00,000
x. 31.1.2011 Paid interest on loan Rs. 5,000
y. 31.1.2011 Paid instalment of loan Rs. 25,000
z. 31.1.2011 Interest allowed by bank Rs. 8,000

Solution:

Analysis of Transaction under Traditional Approach

Sl. No.	Accounts Involved	Nature of Account	Affects	Debit/ Credit
a	Cash a/c Capital a/c	Real Personal	Cash is coming in Subramanya is the giver	Debit Credit
b	Cash a/c Loan from Mahesh	Real Personal	Cash is coming in Mahesh is the giver	Debit Credit
c	Furniture a/c Cash a/c	Real Real	Furniture is coming in Cash is going out	Debit Credit
d	Furniture a/c Mohan a/c	Real Personal	Furniture is coming in Mohan is the giver	Debit Credit
e	Purchase a/c Cash a/c	Nominal Real	Purchase is an expense Cash is going out	Debit Credit
f	Purchase a/c Ram's a/c	Nominal Personal	Purchase is an expense Ram is the giver	Debit Credit
g	Cash a/c Sales a/c	Real Nominal	Cash is coming in Sales is revenue	Debit Credit
h	Shyam's a/c Sales a/c	Personal Nominal	Shyam is the receiver Sales is revenue	Debit Credit

i	Cash a/c Shyam's a/c	Real Personal	Cash is coming in Shyam is the giver	Debit Credit
j	Ram's a/c Cash a/c	Personal Real	Ram is the receiver Cash is going out	Debit Credit
k	Bank a/c Cash a/c	Personal Real	Bank is the receiver Cash is going out	Debit Credit
l	Drawing's a/c Cash a/c	Personal Real	Subramanya is the receiver Cash is going out	Debit Credit
m	Cash a/c Bank a/c	Real Personal	Cash is coming in Bank is the giver	Debit Credit
n	Drawing's a/c Bank a/c	Personal Personal	Subramanya is the receiver Bank is the giver	Debit Credit
o	Cash a/c Shyam a/c	Real Personal	Cash (cheque) is coming in Shyam is the giver	Debit Credit
p	Bank a/c Cash a/c	Personal Real	Bank is the receiver Cash (cheque) is going out	Debit Credit
q	Shyam a/c Bank a/c	Personal Personal	Shyam is the receiver Bank is the giver	Debit Credit
r	Ram's a/c Bank a/c	Personal Personal	Ram is the receiver Bank is the giver	Debit Credit
s	Salary a/c Cash a/c	Nominal Real	Salary is an expense Cash is going out	Debit Credit
t	Rent a/c Bank a/c	Nominal Personal	Rent is an expense Bank is the giver	Debit Credit
u	Drawings a/c Purchase a/c	Personal Nominal	Subramanya is the receiver Decrease is stock	Debit Credit
v	Adv to Suppliers a/c Cash a/c	Personal Real	Suppliers are the receivers Cash is going out	Debit Credit
w	Cash a/c Advance from customers a/c	Real Personal	Cash is coming in Customers are givers	Debit Credit
x	Interest on loans a/c Cash a/c	Nominal Real	Interest is expense Cash is going out	Debit Credit
y	Loan a/c Cash a/c	Personal Real	Lender is the receiver Cash is going out	Debit Credit
z	Bank a/c Bank interest a/c	Personal Nominal	Bank is the receiver Bank interest is an income	Debit Credit

Activity 1:
Using the above example select any ten transactions and analyse the accounting treatment under modern approach.

Answers to Activity 1:

Analysis of the transaction using Modern approach

	Accounts involved	Nature of account	How affected	Debit/ credit
A	Cash a/c Capital a/c	Asset Capital	Increased Increased	Debit Credit
B	Cash a/c Loan from Mahesh a/c	Asset Liability	Increased Increased	Debit Credit
C	Furniture a/c Cash a/c	Asset Asset	Increased Decreased	Debit Credit
D	Furniture a/c Mohan a/c	Asset Liability	Increased Increased	Debit Credit
E	Purchase a/c Cash a/c	Expenses Asset	Increased Decreased	Debit Credit
F	Purchase a/c Ram’s a/c	Expenses Liability	Increased Increased	Debit Credit
G	Cash a/c Sale a/c	Asset Revenue	Increased Increased	Debit Credit
H	Shyam’s a/c Sales a/c	Asset Revenue	Increased Increased	Debit Credit
I	Cash a/c Shyam’s a/c	Asset Asset	Increased Decreased	Debit Credit
J	Ram’s a/c Cash a/c	Liability Asset	Decreased Decreased	Debit Credit
K	Bank a/c Cash a/c	Asset Asset	Increased Decreased	Debit Credit
L	Drawing’s a/c Cash a/c	Capital Asset	Decreased Decreased	Debit Credit
M	Cash a/c Bank a/c	Asset Asset	Increased Decreased	Debit Credit
N	Drawing’s a/c Bank a/c	Capital Asset	Increased Decreased	Debit Credit
O	Cash a/c Shyam a/c	Asset Asset	Increased Increased	Debit Credit

P	Bank a/c Cash a/c	Asset Asset	Increased Decreased	Debit Credit
Q	Shyam a/c Bank a/c	Asset Asset	Increased Decreased	Debit Credit
R	Ram's a/c Bank a/c	Liability Asset	Decreased Decreased	Debit Credit
S	Salary a/c Cash a/c	Expenses Asset	Increased Decreased	Debit Credit
T	Rent a/c Bank a/c	Expenses Asset	Increased Decreased	Debit Credit
U	Drawings a/c Purchase a/c	Capital Expenses	Increased Decreased	Debit Credit
V	Advanced a/c Suppliers a/c	Asset Asset	Increased Decreased	Debit Credit
W	Cash a/c Advance from customers a/c	Asset Liability	Increased Increased	Debit Credit
X	Interest on loans a/c Cash a/c	Expenses Asset	Increased Decreased	Debit Credit
Y	Loan a/c Cash a/c	Liability Asset	Decreased Decreased	Debit Credit
Z	Bank a/c Bank interest a/c	Asset Revenue	Increased Increased	Debit Credit

3.9 Journalising

As we have understood, one of the most important functions of accounting is the recording of transactions. The transactions and events are recorded in the books (journal) in the form of entries. These entries are called journal entries. The journal entries are systematically passed in the journal as per the rules of debit and credit discussed in the previous section.

Journalising is the process of passing journal entries in the journal. These entries are passed in a chronological order. That is, in the order of time, as and when they occur.

We know that every transaction has two aspects, the debit aspect and the credit aspect. By usage, the debit entry is passed first and then the credit entry. The "Dr." is written against the account which is debited. The account which is credited is written below starting with "To".

Given below is the format of the journal.

Date	Particulars	LF	Debit Rs.	Credit Rs.

These columns are explained below.

- *Date* – The date of the transaction is recorded
- *Particulars* – The journal entry is recorded
- *Ledger Folio (LF)* – The page number in the ledger where that particular journal entry is posted is recorded
- *Debit* – The debit amount is recorded
- *Credit* – The credit amount is recorded
- *Narration* – It is a brief explanation about the journal entry

Illustration 4:

Pass journal entries and provide the narrations for the transactions given in illustration 3.

Solution:

Books of Subramanya

Journal

Date	Particulars	LF	Debit Rs.	Credit Rs.
2011				
Jan 1	Cash a/c Dr.		5,00,000	
	To Capital a/c			5,00,000
	(started business with cash)			
2	Cash a/c Dr.		5,00,000	
	To Loan from Mahesh			5,00,000
	(took loan from amount)			
3	Furniture a/c Dr.		1,00,000	
	To Cash a/c			1,00,000
	(bought furniture for cash)			

4	Furniture a/c Dr. To Mohan a/c (bought furniture on credit)		1,50,000	 1,50,000
5	Purchases a/c Dr. To Cash a/c (bought goods for cash)		50,000	 50,000
6	Purchases a/c Dr. To Ram's a/c (bought goods on credit)		2,50,000	 2,50,000
8	Cash a/c Dr. To Sales a/c (cash sales)		1,25,000	 1,25,000
8	Shyam's a/c Dr. To Sales a/c (credit sales to Shyam)		55,000	 55,000
9	Cash a/c Dr. To Shyam's a/c (cash received from Shyam)		25,000	 25,000
10	Ram's a/c Dr. To Cash a/c (cash paid to Ram)		90,000	 90,000
11	Bank a/c Dr. To Cash a/c (cash deposited to bank)		5,00,000	 5,00,000
11	Drawings a/c Dr. To Cash a/c (withdrew cash for personal use)		10,000	 10,000
14	Cash a/c Dr. To Bank a/c (withdrew cash from bank for office use)		50,000	 50,000
15	Drawings a/c Dr. To Bank a/c (withdrew cash from bank for office use)		15,000	 15,000
15	Cash a/c Dr. To Shyam a/c (cheque paid by Shyam)		20,000	 20,000

16	Bank a/c Dr. To Cash a/c (Shyam's cheque deposited)		20,000	20,000
18	Shyam a/c Dr. To Bank a/c (Shyam's cheque dishonoured)		20,000	20,000
19	Ram's a/c Dr. To Bank a/c (paid by cheque to Ram)		1,50,000	1,50,000
20	Salary a/c Dr. To Cash a/c (Salaries paid in cash)		30,000	30,000
20	Rent a/c Dr. To Bank a/c (rent paid by cheque)		8,000	8,000
21	Drawings a/c Dr. To Purchase a/c (withdrew goods for personal use)		5,000	5,000
25	Advance to Suppliers a/c Dr. To Cash a/c (Advance paid to Suppliers)		1,00,000	1,00,000
26	Cash a/c Dr. To Advance from customers a/c (Advance received from customers)		3,00,000	3,00,000
31	Interest on loan a/c Dr. To Cash a/c (Interest on loan paid in cash)		5,000	5,000
31	Loan from Mahesh a/c Dr. To Cash a/c (Loan instalment paid)		25,000	25,000
31	Bank a/c Dr. To Bank interest a/c (interest allowed by bank)		8,000	8,000

3.10 Posting to Ledger

As we have understood, the second process in the accounting trail is classifying. This involves putting together all transactions pertaining to a particular account. This is done in another book called "Ledger". Ledger is

the book of final entry. The transactions recorded in the journal as journal entries are transferred to this book. It consists of “T” form accounts called ledger accounts. A “T” form account is opened for each account. The “T” form account has two sides. The left hand side is called the “Debit side”. The right hand side is called the “Credit side”.

The format of the “T” account is shown below.

_______ Account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
	Total				**Total**		

In this context it is better to know this concept

Compound entries

A compound journal entry is passed when more than two accounts are involved in a transaction and the transaction is recorded by means of a single entry instead of passing several journal entries.

Example 1: Paid Rs.980 to Bharat in full settlement of his account of Rs.1000

Journal entry

Bharat’s a/c Dr. 1000
To Discount Received a/c 20
To Cash a/c 980
(Being cash paid to Bharat in full settlement of his account)

Posting to ledger

It is the process of transferring journal entries from journal to ledger. Each journal entry is posted to both the accounts in the ledger under the appropriate side. To decide the appropriate side, the following thumb rule may be followed.

- If an account is debited in the journal entry, then post it on the debit side of that account in the ledger.

- If an account is credited in the journal entry, then post it on the credit side of that account in the ledger.

Journal Folio (JF)

The page number of the journal in which this particular entry may be found is entered in this column. This is done in order to facilitate a cross reference when required.

Balancing the ledger account

The postings within a ledger account are also done in chronological order. During a given period of time, an account may have many debits and credits. The process of finding the net effect (net debit or net credit) for a given period is called balancing the ledger account. The ledger accounts are normally balanced at an interval of one month, that is, at the end of every month.

The following holds good if the debit total is larger.

- The “Bal c/d” will be on the credit side in the current month
- The “Bal b/d” will be on the debit side in the next month
- The account is said to be having a “debit balance”

The following holds good if the credit total is larger.

- The “Bal c/d” will be on the debit side in the current month
- The “Bal b/d” will be on the credit side in the next month
- The account is said to be having a “credit balance”

The posting and balancing can be understood more clearly with the help of an illustration.

Illustration 5:

Post the journal entries passed in illustration 4 to ledger and balance the accounts for the month of January 2011.

Solution:

Books of Subramanya
Ledger
Cash account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
1	To Capital		500000	3	By Furniture		100000
2	To Loan from Mahesh		500000	5	By Purchases		50000
				10	By Ram		90000
8	To Sales		125000	11	By Bank		500000
9	To Shyam		25000	11	By Drawings		10000
14	To Bank		50000	16	By Bank		20000
15	To Shyam		20000	20	By Salary		30000
26	Advance from customers		300000	25	By Advance to Suppliers		100000
				31	By Interest on loan		5000
				31	By Loan from Mahesh		25000
				31	By bal c/d		590000
	Total		1520000		Total		1520000
Feb 1	To bal b/d		590000				

Capital account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan 31	To bal c/d		500000	Jan 1	By Cash		500000
	Total		500000		Total		500000
				Feb	By bal b/d		500000

Loan from Mahesh's account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan 31 31	 To Cash To bal c/d		 25000 475000	Jan 2	 By cash		 500000
	Total		500000		Total		500000
				Feb 1	By bal b/d		500000

Furniture account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan 3 4	 To Cash To Mohan		 100000 150000	Jan 31	 By bal c/d		 250000
	Total		250000		Total		250000
Feb 1	To bal b/d		250000				

Mohan's account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan 31	 To bal c/d		 150000	Jan 4	 By Furniture		 150000
	Total		150000		Total		150000
				Feb 1	By bal b/d		150000

Purchases account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan 5 6	 To Cash To Ram		 50000 250000	Jan 21 31	 By Drawings By bal c/d		 5000 295000
	Total		300000		Total		300000
Feb 1	To bal b/d		295000				

Ram's account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
10	To cash		90000	6	By Purchases		250000
19	To Bank		150000				
31	To bal c/d		10000				
	Total		250000		Total		250000
				Feb 1	By bal b/d		10000

Sales account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
31				8	By Cash		125000
	To bal c/d		180000	8	By Shyam		55000
	Total		180000		Total		180000
				Feb 1	By bal b/d		180000

Shyam's account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
8	To Sales		55000	9	By Cash		25000
18	To Bank		20000	15	By Cash		20000
				31	By bal c/d		30000
	Total		75000		Total		75000
Feb 1	To bal b/d		30000				

Bank account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
11	To Cash		500000	14	By Cash		50000
16	To Cash		20000	15	By Drawings		15000
31	To Bank interest		8000	18	By Shyam		20000
				19	By Ram		150000
				20	By Rent		8000

				31	By bal c/d		285000
	Total		528000		Total		528000
Feb 1	To bal b/d		285000				

Drawings account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
11	To Cash		10000	31	By bal c/d		30000
15	To Bank		15000				
21	To Purchases		5000				
	Total		30000		Total		30000
Feb 1	To bal b/d		30000				

Salary account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
20	To Cash		30000				
				31	By bal c/d		30000
	Total		30000		Total		30000
Feb 1	To bal b/d		30000				

Rent account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
20	To Bank		8000				
				31	By bal c/d		8000
	Total		8000		Total		8000
Feb 1	To bal b/d		8000				

Advance to supplier's account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan			
25	To Cash		100000				
				31	By bal c/d		100000
	Total		100000		Total		100000
Feb 1	To bal b/d		100000				

Advance from customer's account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan 31	To bal c/d		300000	Jan 26	By Cash		300000
	Total		300000		Total		300000
				Feb 1	By bal b/d		300000

Interest on loan account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan 11	To Cash		10000	Jan			
31	To Cash		5000	31	By bal c/d		15000
	Total		15000		Total		15000
Feb 1	To bal b/d		15000				

Bank interest account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
Jan				Jan 31	By Bank		8000
31	To bal c/d		8000				
	Total		8000		Total		8000
				Feb 1	By bal b/d		8000

Illustration 6:

Identify the accounts which have debit balance and the accounts which have credit balance in illustration 5.

Solution:

Accounts having debit balance

- Cash
- Furniture
- Purchases
- Shyam

- Bank
- Drawings
- Salary
- Rent
- Advance to suppliers
- Interest on loan

Accounts having credit balance

- Capital
- Loan from Mahesh's account
- Mohan
- Ram
- Sales
- Advance from customers
- Bank interest

3.11 Accounting Equation

The preparation of balance sheet is the final step in accounting process. The accounting equation indicates that the sources of funds should be equal to uses of funds. In other words, proprietor's equity and liabilities to outsiders should be equal to assets.

Sources of fund = Application of funds

OR

Owner's equity = Assets

OR

Owner's equity + outside liabilities = Assets

$$L + P = A$$
$$L = A - P$$
$$P = A - L$$
$$A - L - P = \text{Zero}$$

Where L is liabilities, P is proprietor's equity, and A is assets.

The following steps are involved in developing accounting equation:

1) Ascertain the variables (assets, liabilities or capital) of an equation affected by the transaction.
2) Find out the effect (in terms of increase or decrease) of a transaction on the variables of the equation.
3) Show the effect on the appropriate side of an equation.

Illustration 7:

Transaction 1: Started business with Rs.1,00,000

Variables affected	Asset and capital
Effect of the transaction	Increase in asset and capital
Accounting Equation	Asset = Liabilities + Capital 1,00,000 = 0 + 1,00,000

Transaction 2: Purchased goods for cash Rs.20,000

Variables affected	Asset
Effect of the transaction	Increase in one asset (stock) and decrease in another asset (cash)
Accounting Equation	Asset = Liabilities + Capital -20,000 +20,000 = 0 + 0

Transaction 3: Sold goods costing Rs.10,000 for cash Rs.12,000

Variables affected	Asset and capital
Effect of the transaction	Increase in one asset (cash) and decrease in another asset (stock) and increase in capital
Accounting Equation	Asset = Liabilities + Capital- Stock + Cash -10,000 +12,000 = 0 + 2,000

Self Assessment Questions

16. Liabilities plus equity is equal to ____________________________.
17. Assets minus liabilities to outsiders are equal to __________________.
18. If assets are Rs. 5,00,000 and liabilities are Rs.3,00,000, find out the equity.

19. If owner's equity is Rs. 3,00,000, outsider liabilities are Rs.2,00,000, and owner's share of profit is Rs.1,00,000, find out the total value of assets.
20. Every transaction influences balance sheet and it is shown by accounting equation. (True/False)

Activity 2:

Show the accounting equation for the following transaction

a) Shri Ram commenced business with Rs.50,000
b) Paid rent in advance Rs.2000
c) Purchased a typewriter for Rs.7000
d) Bought furniture from M/s Mohan Lal on credit for Rs.3000
e) Purchased goods from Sohan for cash Rs.35,000
f) Sold goods to Shyam for cash Rs.40,000 (costing Rs.30,000)

Answers to Activity 2

Accounting Equation: Asset = Liabilities + Capital

	Asset		Liabilities		Capital
A	50,000	=	0	+	50,000
b	50,000	=	0	+	50,000
	(-) 2,000				
	(+) 2,000				
NEW EQUATION	50,000	=	0	+	50,000
c	(-) 7,000				
	(+) 7,000				
NEW EQUATION	50,000	=	0	+	50,000
D	(+) 3,000	=	3,000	+	0
NEW EQUATION	53,000	=	3,000	+	50,000
E	(-) 35,000				
	(+) 35,000				
NEW EQUATION	53,000	=	3,000	+	50,000
F	(-) 30,000				
	(+) 40,000	=	0	+	10,000
NEW EQUATION	63,000	=	3,000	+	60,000

3.12 Summary

Let us recapitulate the important concepts discussed in this unit:

- Double entry system of book-keeping identifies and records two aspects in every transaction.
- The accounts are classified into personal account, real account, and nominal account. Under accounting equation or modern approach, the accounts are classified into asset account, liability account, capital account, revenue account, and expenses account.
- Journalising is the first process in accounting trial. Transactions are recorded in the journal in the form of journal entries.
- Posting to ledger is the process of transferring journal entries from journal to ledger. Each journal entry is posted to both the accounts in the ledger under the appropriate side.

3.13 Glossary

Accounting trail: The cycle of processes starting from recording of transactions to preparing of profit and loss account and balance sheet.

Balancing: The act of finding the net effect of debits and credits to an account.

Nominal accounts: Accounts of expenses, losses, incomes, and gains.

Personal accounts: Accounts of persons (natural, artificial or representative).

Real accounts: *A*ccounts of assets.

3.14 Terminal Questions

1. The accounting equation is Assets = ________________ + ________________.
2. State the meaning of double entry book-keeping.
3. What is accounting trail?
4. Find the value of the following:
   a. If the total assets are Rs. 87,000 and the liabilities are Rs. 47,000, find out the amount of capital.

b. If the capital of proprietor is Rs. 4,00,000 and the total assets are Rs. 6,00,000, what is the amount of liabilities to outsiders?
c. If creditors are Rs. 56,000, bank overdraft is Rs.1,00,000, and outstanding expenses are Rs. 8,000, what is the total amount of assets?
d. Fixed assets are Rs.70,000 and current assets are Rs.1,00,000 and the creditors are Rs.30,000. What is capital?

3.15 Answers

Self Assessment Questions

1. b)
2. a. Stock of goods increases and cash balance is reduced
   b. Delivery van is an asset and the supplier of the delivery van becomes a creditor and it appears as liability
   c. Creditor's balance is reduced on liabilities side and cash paid brings down the cash balance on the asset side
   d. The bank balance comes down on asset side and capital account is reduced by the amount of drawings on the liabilities side.
3. False
4. True
5. True
6. True
7. False
8. True
9. True
10. Real, Personal, Nominal
11. True
12. True
13. True
14. True
15. i) Event ii) Event iii) Transaction iv) Transaction v) Event
16. Assets
17. Equity

18. Rs. 2 lakh
19. Assets are Rs.6 lakh
20. True

Terminal Questions

1. Liabilities + Owner's capital
2. Every transaction has two aspects, debit and credit and for every debit there is an equivalent credit.
3. Accounting trial is a sequential order in which the accounting process. Refer 3.6
4. flows. a) Rs.40000 b) Rs.200000 c) Rs.164000 d) Rs.140000

3.16 Case Study

Accounting Transactions

Mr. R. Das started a business on 1.05.2011 with Rs.1,57,000 which he deposited to SBI in an account opened for business purpose. He incurred the following transactions during the six months ending 31.10.2011.

		Rs.
Furniture purchased for cash	25,000	
Cash withdrawn for personal use		35,000
Goods sold to Manju on credit		3,000
Cash sales		1,37,000
Depreciation charged on furniture	20,000	
Salaries paid		1,02,000
Interest received		40,000
Commission received		10,000
Commission paid		31,000
Discount allowed to customers		2,000
Credit sales		1,00,000
Bad debts written off	2,000	
Stationery purchased	4,000	
Cash deposited to bank		50,000

His accountant had prepared the bank account for six months in the ledger and reported that the bank balance as on 31.10.2011 was Rs. 64,000 credit (overdraft).

Bank Account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
	To Furniture		25,000	May 1	By Cash		1,57,000
	To Drawings		35,000		By Manju		3,000
	To Sales		1,37,000		By Salaries		1,02,000
	To Depreciation		20,000		By Interest received		40,000
	To Commission received		10,000		By Commission paid		31,000
	To Credit sales		10,000		By Discount allowed		2,000
Oct 31	To Bal c/d		64,000		By Bad debts written off		2,000
					By Stationery		4,000
					By Cash		50,000
	Total		3,91,000		Total		3,91,000
				Nov 1	By bal b/d		64,000

Mr. R. Das was however shocked because his bank statement showed a balance of Rs.1,97,000.

He suspects that the accountant has not prepared the bank account correctly. He requests you to:

1. Check the account prepared by him
2. Show the wrong entries (if any) made by him.
3. Redraft the account.

All his transactions were through bank.

Source: *Jain S. P. and K. L. Narang, Financial Accounting, Kalyani Publishers*.

Case Study – Hint

Mistakes made by the accountant

- Non cash items like depreciation, credit sales, discount allowed and bad debts written off do not appear in the bank account.
- Transactions which increase the bank balance must be debited to the bank account. He has debited 'Drawings' (Rs. 35,000) and furniture

purchased (Rs. 25,000) to the account both of which actually decrease the bank balance.

- Transactions which decrease the bank balance must be credited to the bank account. He has credited 'interest received' (Rs. 40000) and 'cash' deposited (Rs. 1,57,000 and Rs. 50,000) to the account both of which actually increase the bank balance.

Redrafted Bank Account

Bank Account

Dr. Cr.

Date	Particulars	JF	Rs.	Date	Particulars	JF	Rs.
	To Cash		1,57,000	May 1			
	To Sales		1,37,000		By Furniture		25,000
	To Interest received		40,000		By Drawings		35,000
					By Salaries		1,02,000
	To Commission received		10,000		By Commission paid		31,000
	To Cash		50,000		By Stationery		4,000
				Oct 31	By Bal c/d		1,97,000
	Total		3,94,000		Total		3,94,000
Nov 1	To bal b/d		1,97,000				

References:

- Narayanaswamy.R, Financial Accounting, A Managerial Perspective 3/e, PHI.
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Unit 4 Subsidiary Books

Structure:

4.1 Introduction
  Objectives
4.2 Subsidiary Books
  Purchases book
  Sales book
  Purchases returns book
  Sales returns book
  Bills receivable book
  Bills payable book
  Cash book
  Petty cash book
4.3 Summary
4.4 Glossary
4.5 Terminal Questions
4.6 Answers
4.7 Case Study

4.1 Introduction

In the previous unit we analysed double entry accounting, journalising, posting, debit, credit, and balancing. We also discussed the classification of accounts under traditional approach and accounting equation approach.

Journal is a book of original entry and only one journal is maintained if the business is very small in size and the transactions are limited. However, for large businesses having numerous transactions, it becomes difficult if all transactions were to be recorded in the same book. Hence, the need for sub dividing the journal arises. Such sub divisions of journal are called "Subsidiary books".

In this unit, we will study how to maintain subsidiary books in detail.

Objectives:

After studying this unit, you should be able to:

- analyse the need and importance of subsidiary books
- list the various subsidiary books maintained by companies

- record transactions in the appropriate subsidiary books
- draw up single column, double column, and triple column cash books
- analyse the need and importance of petty cash book

4.2 Subsidiary Books

Each subsidiary book is meant for recording transactions of a particular type. Typically, the subsidiary books are maintained for transactions that occur most repeatedly and are most voluminous. For example, sales, purchases, and cash transactions.

The following seven types of subsidiary books are popular.

1. Purchases book
2. Sales book
3. Purchases returns book
4. Sales returns book
5. Bills receivable book
6. Bills payable book
7. Cash book

A transaction that cannot be entered into any of these subsidiary books will be entered in the basic journal (journal proper).

The transactions, as and when they occur, are directly entered in the subsidiary books without recording in the journal proper. Hence the subsidiary books are also books of original entry. From the respective books, posting is made to the ledger at regular time intervals (say a month).

Let us now understand each type of subsidiary books in detail.

4.2.1 Purchases book (purchases journal)

This book is meant for recording purchases. However, only credit purchases of goods are recorded in this journal as the cash purchases will pass through the cash book. The format of purchases book is given below.

Format of Purchases Book

Date	Purchase Invoice No.	Name of the supplier (creditor)	L.F.	Details	Amount

Each of the columns of the purchases book is explained below.

- ***Date –*** The credit purchases made are entered in this book in chronological order. The date of purchase is entered in this column.
- ***Purchase invoice number –*** The invoice number of that particular purchase is entered in this column.
- ***Name of the supplier –*** Name and address of the supplier (creditor) is entered in this column.
- ***Details –*** Details of a particular purchase like description of the goods, quality, quantity, unit selling price, gross amount of the bill, trade discount if any, etc. are entered in this column.
- ***Amount –*** The net amount of the bill (gross minus trade discount if any) is entered in this column. This amount represents the amount of bill due to that particular supplier (creditor).

In this context it is better to know about three important terms- Trade discount, Cash discount and Credit period

- **Trade discount**

It is a reduction granted by a supplier on the listed **(catalogue)** price of goods or services on business consideration (such as quantity bought, trade practices, etc.). For prompt payment cash discount is allowed.

Example: 5 gold coins are sold at the list price of Rs.15,000 each, subject to trade discount of 12%. The trade discount will be calculated as:

5 gold coins @ Rs.15,000	75,000
Less trade discount @ 12 %	9,000
Amount payable as per invoice	66,000

- **Cash discount**

It is a reduction granted by a supplier to a customer on the amount of bill due, considering payment within the credit period. It is given in order to encourage prompt payment by the customer.

- **Credit period**

It is the time given by a supplier to a customer to make payment for the purchases made. Normally the credit period allowed in business is 30 days, 45 days, 60 days, or 90 days.

Example: 5 gold coins are sold at the list price of Rs.15,000 each, subject to trade discount of 12%. The invoice price after trade discount is Rs. 66,000. Cash discount terms are 2%, 30 days. This denotes that the buyer will get 2% cash discount if he makes payment within 30 days. The cash discount is calculated as follows:

Amount payable as per invoice	66,000
Less cash discount @ 2%	1,320
Cash payable if paid within 30 days	64,680

Differences between trade discount and cash discount are:

1. Trade discount is a reduction granted by a supplier on the catalogue price. Cash discount is a reduction granted on the invoice price, considering immediate payment or payment within a stipulated period.
2. Trade discount is given to promote sales while cash discount encourages early or prompt payment.
3. Trade discount does not appear in the books of accounts but cash discount appears in the books of accounts.
4. Trade discount may vary with the quantity purchased while cash discount varies with the period.

Illustration 1: From the following transactions, prepare the purchase book of Adithya bros.

Date	Invoice No.	Particulars
5.3.20X1	442	Purchased on credit from Goyal Bros – 55 polyester sarees @ Rs.100 Less**:** Trade discount @10%
8.3.20X1	450	Purchased on credit from Adikari Mills – 10 silk sarees @ Rs.2500 Less**:** Trade discount @10%
15. 3.20X1	451	Cash purchases from RD ltd. 20 chiffon sarees @ Rs.7,500 Less: Trade discount @5%

Solution:

Books of Adithya Bros
Purchase Book

Date	Purchase Invoice No.	Name of the supplier	L.F.	Details Rs.	Amount Rs.
5.3.20X1	442	Goyal Bros			
		55 polyester sarees @ Rs. 100		5,500	
		Less: Trade discount 10%		550	4,950
8.3.20X1	450	Adikari Mills			
		10 silk sarees @ Rs.2,500		25,000	
		Less: Trade discount 10%		2,500	22,500
		Total for the month			27,450

Note: Cash purchases from RD ltd. will be recorded in cash book.

4.2.2 Sales book

Sales book or sales day book is the subsidiary book meant for recording sales. However, only credit sale of goods are recorded in this journal as the cash sales will pass through the cash book. The format of sales book is given below.

Format of Sales Book

Date	Invoice No.	Name of the Customer (Debitor)	L.F.	Details Rs.	Amount Rs,

Illustration 2: From the following transactions, prepare the sales book of Adithya Bros.

Date	Invoice No.	Particulars
20X1 15.3	621	Sold on credit to MRV Ltd. – 25 polyester sarees @ Rs.250 Less: Trade discount @10%
18.3.	622	Sold on credit to PHR Ltd. – 5 silk sarees @ Rs. 3,500 Less: Trade discount @10%
25. 3.	623	Cash sales to BV Ltd. – 10 chiffon sarees @ Rs.10,000 Less: Trade discount @5%

Solution:

Books of Adithya Bros

Sales Book

Date	Invoice No.	Name of the customer	L.F.	Details	Amount Rs.
20X1 15.3.	621	MRV Ltd. 25 polyester sarees @ Rs.250 Less: Trade discount 10%		6,250 625	5,625
18.3.	622	PHR Ltd. 5 silk sarees @ Rs. 3,500 Less: Trade discount 10%		17,500 1,750	15,750
		Total for the month			21,375

Note: Cash sales to BV ltd. will be recorded in cash book.

4.2.3 Purchases returns book

Purchases returns refer to goods returned to the supplier out of purchases made from him. The reason for such return of goods can be because the goods were damaged, were not as per specifications, or were not as per the sample approved.

Purchases returns book

It is the subsidiary book meant for recording the purchases returns. However, only such returns, which are made out of credit purchases, are recorded in this journal as the returns out of cash purchases will pass through the cash book. The purchases returns book is also called "Returns Outwards Book". The format of purchases returns book is given below.

Format of Purchases Returns Book

Date	Debit Note No.	Name of the supplier	L.F.	Details Rs.	Amount Rs.

4.2.4 Sales returns book

Sales returns refer to goods returned by the customer out of sales made to him. The reason for such return of goods can be because the goods were

damaged, were not as per specifications, or were not as per the sample approved. The format of sales returns book is given below.

Format of Sales Returns Book

Date	Credit Note No.	Name of the customer	L.F.	Details Rs.	Amount Rs.

Credit note number

The value of sales returns is deducted from the amount receivable from the customer. In order to do such deductions, the debtor's account will be credited in the books of the creditor. A credit note is a note sent to the debtor (buyer) by the creditor (supplier) to intimate that his account has been credited in the books of the creditor. It contains details like date of return, specifications and quantity of the goods returned, reasons for the return, and the value of the goods returned.

4.2.5 Bills receivable book

Bill receivable book is one of the subsidiary books. To prepare this book one should know about the bill of exchange. A bill of exchange is defined by the Indian Negotiable Instruments Act, 1881 as "an instrument in writing containing an unconditional order signed by the maker, directing a certain person to pay a certain sum of money only to, or to the order of a certain person or to the bearer of the instrument ".

Normally a bill of exchange is raised when goods are sold or purchased on credit.

The parties to a bill of exchange are:

- ***Drawer* –** He is the creditor who writes (draws) the bill of exchange on the debtor.
- ***Drawee* –** He is the debtor who accepts the bill of exchange.
- ***Payee* –** He is the person who is entitled to receive the amount mentioned in the bill. Normally the drawer is also the payee of the bill.

Accepting of a bill of exchange

The creditor draws the bill and presents it to the debtor for accepting it. The debtor accepts the bill by affixing his signature on the bill. By doing so the

debtor acknowledges that he owes the amount mentioned there in to the drawer and also agrees to repay it on or before the date mentioned there in.

Bills Receivable (B/R) and Bills Payable (B/P)

The bill of exchange drawn by the creditor becomes a valid document after it is signed by the debtor. The same bill becomes a 'Bill Receivable' for the creditor and a 'Bill Payable' for the debtor.

Bills receivable book is a subsidiary book meant for recording acceptances obtained from the debtors. A hypothetical bills receivable book is given below.

Books of Sham Sundar & Co.,

Bills Receivable Book

No. of the bill	Date of receipt	Date of the bill	Received from whom	Accep-tor	Where payable	Term of the bill	Due Date*	LF	Amount Rs.	Remarks
1	**1-7-11**	**1-7-11**	Mr. X	Mr. X	Delhi	3 mths	**4-10-11**		7,000	
2	**5-7-11**	**5-7-11**	Mr. Y	Mr. Y	Noida	4 mths	**8-10-11**		9,000	
3	**19-7-11**	**19-7-11**	Mr. A	Mr. A	Agra	3 mths	**22-10-11**		12,000	
4	**25-7-11**	**25-7-11**	Mr. B	Mr. B	Delhi	4 mth	**28-10-11**		10,000	
	Total for the month								38,000	

4.2.6 Bills payable book

Bills payable book is a subsidiary book meant for recording acceptances given to creditors.

A hypothetical bills payable book is given below.

Books of Sun Shine Co.

Bills Payable Book

No. of the bill	Date of the bill	To whom given	Drawer	Payee	Where payable	Term of the bill	Due date	LF	Amount Rs	Date paid	Re-marks
1	7.6.2000	Ram	Ram	Ram.	Agra	3 months	2000 Sept 10		56,000		
2	June 12	Sunder	Sunder	Sunder	Delhi	4 months	Oct 15		72,000		
3	June 20	KV	KV	KV	Chennai	5 months	Nov 23		50,000		
							Total		1,78,000		

4.2.7 Cash book

Cash book is the most important subsidiary book. It is the book meant for recording all cash transactions i.e., cash receipts and cash payments made during a particular period.

Differences between other subsidiary books and cash book.

Other subsidiary books	**Cash book**
They are only journals	It is both a journal and a ledger
Ledger accounts have to be maintained in the ledger like Purchases a/c, Sales a/c, Purchases Returns a/c, Sales Returns a/c, B/R a/c, and B/P a/c.	No separate ledger account is maintained in the ledger for cash. Cash book serves as cash account also.
They do not have debit and credit side.	It has debit and credit side. It looks like a ledger account.
They are not balanced but only totalled. The total is transferred to the respective ledger accounts.	It is balanced as it is also a ledger account. The cash book itself gives the balance.

Recording transactions in the cash book

The receipts of cash are debited to the cash book and the payments of cash are credited to the cash book. The format of cash book is given below.

Format of Cash Book

Dr. Cr.

Date	Particulars (Receipts)	V No.	LF	Amount Rs.	Date	Particulars (Payments)	R No.	LF	Amount Rs.
						By Bal c/d			
	Total					Total			
	To Bal b/d								

Two columns of the cash book are explained below.

- *V no. (Voucher number)* - A voucher is a document raised to record receipt of cash. They are serially numbered. The number of the voucher in which a particular receipt is recorded is entered in this column.

- *R no. (Receipt number)* - The number of the receipt in which a particular payment is recorded is entered in this column.

Types of Cash Books

Following are the different types of cash books.

1. Simple cash book (Single column cash book)
2. Two column cash book
3. Three (triple) column cash book
4. Petty cash book
   a. Simple cash book
   b. Analytical cash book

Let us now understand the different cash books in detail.

1. Simple cash book

It has only one amount column on either side. The format of cash book shown above is a simple cash book.

2. Two column cash book

The discount columns are inserted in the cash book to:

- Enter the discount allowed to debtors along with the payment received from them.
- Enter the discount received from creditors along with the payment made to them.

Hence there will be two amount columns on either side of the cash book. Such a cash book is called two column cash book. The discount allowed column appears on the debit side and the discount received column appears on the credit side of the two column cash book. The format of two column cash book is given below.

Format of Two Column Cash Book

Dr. Cr.

Date	Particulars (Receipts)	V No.	L F	DA Rs.	Amount Rs.	Date	Particulars (Payments)	R No	L F	DR Rs.	Amount Rs.
							By Bal c/d				
	Total						Total				
	To Bal b/d										

DA = Discount Allowed

DR = Discount Received

While the amount column is balanced, the discount columns are only totalled but not balanced.

3. Three (Triple) column cash book

Presently, most of the cash transactions happen through banks. It would be convenient to maintain the bank account also in the cash book. In order to do this, a bank column is inserted on either side of the cash book. Hence, there will be three amount columns on either side of the cash book. Such a cash book is called three (triple) column cash book. Amount deposited to the bank account appears on the debit side of the cash book and the amount withdrawn from the bank account appears on the credit side. The format of three column cash book is given below.

Format of Three Column Cash Book

Dr. Cr.

Date	Particulars (Receipts)	V No.	L F	DA Rs.	Cash Rs.	Bank Rs.	Date	Particulars (Payments)	R No	L F	DR Rs.	Cash Rs.	Bank Rs.
								By Bal c/d					
	Total							Total					
	To Bal b/d												

Contra Entry

A contra entry is an entry which appears on both sides of a three column cash book. This happens in the following two situations.

1. When cash is deposited to the bank account

   Journal entry

   Bank a/c Dr.

   To Cash a/c

2. When cash is withdrawn from the bank account

   Cash a/c Dr.

   To Bank a/c

As both cash and bank accounts are maintained in the cash books, both postings are done to the cash book itself. Therefore, the entry appears twice in the cash book, once on either side.

Some hypothetical cash books are shown for all the three types (single, double and three column). (Petty cash book is discussed in the later section)

Single column cash book of Rekha & Bros

Dr. Cr.

Date	Receipts	Cash	Date	Payments	Cash
2003			**2003**		
July 1	To Balance b/d	4,500	July 1	By Rent of shop	900
4	To Sales	8,050	3	By Postage	50
10	To Interest on FD	2,000	14	By Purchases	7,000
20	To Commission	4,000	20	By Stationery	800
28	To Sale of goods	10,000	28	By wages	2,000
30	To Balagopalan	5,000	31	By Narasimhan	9,000
				By Balance c/d	13,800
	Total	33,550		Total	33,550

Two column cash book of Simpson Co.

Dr. Cr.

Date	Receipts	DA (Rs.)	Cash (Rs.)	Date	Payments	DR (Rs)	Cash (Rs)
2003				**2003**			
Apr 5	To Balance b/d		13,000	Apr 2	By Wages		400
	To Sales		800	5	By Electricity		50
7	To Ashok Co	250	2,000	8	By Repairs		400
11	To Beta Co	150	2,350	15	By Venki Ltd	200	10,800
20	To Sales		500	30	By Balance c/d		7,000
	Total	400	18,650		Total	200	18,650

Three column cash book of Janardhan Works

Dr. Cr.

Date	Receipts	DA Rs.	Cash Rs.	Bank Rs.	Date	Payments	DR Rs.	Cash Rs.	Bank Rs.
2002 Jan 2	To balance b/d		3700	4,500	2002 Jan 6	By wages		1,550	
Jan 5	To Patel	100	2,400		Jan 3	By Agarwal	50	950	
10	To Neelima			6,000	15	By Cash C			3,000
15	To Bank C		3,000		22	By Drawings			2,000
30	To Cash C			1,000	30	By Bank C		1,000	
31	To Dividend from X Co			2,000	31	By Rent			1,500
					31	By Bal c/d		5,600	7,000
	Total	100	9,100	13,500		Total	50	9,100	13,500
Feb 1	To bal b/d		5,600	7,000					

C: Contra Entry

4.2.8 Petty cash book

A separate cash book can be maintained for petty (small) expenses like stationery, postage, stamps, refreshments, carriage, cartage, daily wages, etc. Such a separate book is known as petty cash book.

Types of petty cash book

1. Simple petty cash book
   It looks like a simple cash book.
2. Analytical petty cash book
   This is prepared in a columnar fashion to facilitate analysis of payments.

The petty cash book is normally maintained under a system called Imprest system. Under this system, at the beginning of a month, a fixed sum of money is given by the chief cashier to the petty cashier to meet petty expenses. At the commencement of the next period, the petty cashier is reimbursed to the extent of amount spent by him during the earlier period.

Illustration 3:

Enter the following transactions in an analytical petty cash book for the month of November, 2005.

1st. Received a cheque for petty cash Rs.1000

2nd. Paid bus fare to messengers Rs. 50

4th. Paid auto fare Rs.70

10th. Postal stamps purchased Rs.80

12th. Paid for stationery Rs.90

5th. Paid for carriage Rs.60

16th. Purchased envelopes Rs.50

20th. Paid wages Rs.100

25th. Gave tips to driver Rs.50

30th. Paid telephone bills Rs.20

Analytical petty cash book

Date	Particulars	Amount	Date	Particulars	voucher No.	Total payments	Analysis of payments						LF	Ledger A/c's
			Nov				Travel Rs.	Postage Rs.	Carriage Rs.	Printing and Stationery Rs.	Wages Rs.	Sundry Expenses Rs.		
Nov 1	To bank	1000	1st	By bus fare		50	50							
			2	By auto fare		70	70							
			4	By postal		80		80						
			10	By stationery		90				90				
			12	By carriage		60			60					
			15	By cnvelopes		50				50				
			16	By wages		100					100			
			20	By tips		50						50		
			25	By telegram		20		20						
			30	Total exp		570	120	100	60	140	100	50		
			No30	By balance c/d		430								
				Total		1000								
Dec 1st	To bal b/d To Cash	430 570												

Activity 1:
Draw the formats of various subsidiary books.

Hint: Refer to Section 4.2.7

Self Assessment Questions

1. Purchases book contains only cash purchases. (True/False)
2. Sale book contains sale of goods and assets. (True/False)
3. Credit note is sent to a debtor. (True/False)

4. Cash book is also a cash account. (True/False)
5. Trade discount and cash discount are the same. (True/False)
6. Contra entry appears on both sides of a single column cash book. (True/False)
7. Petty cash book is maintained in case of petty organisation. (True/False)
8. "Imprest" is a fixed amount given by the main cashier to the petty cashier. (True/False)

4.3 Summary

Let us recapitulate the important concepts discussed in this unit:

- Subsidiary books are subdivisions of journal. They include purchase book, sales book, purchases return book, sales returns book, bills receivables book, bills payable book, cash book, and journal proper.

There are two types of discounts -trade discount and cash discount.

- Bill of exchange is a document in writing promising to pay a certain sum of money or money's worth to the drawer at a certain date for the value received.
- Cash book records cash receipts and cash payments made during a particular period.

4.4 Glossary

Cash discount: Deduction from the amount of debt due.

Contra entry: An entry which appears on both sides of a triple column cash book.

Imprest: Amount given by the main cashier to the petty cashier to meet petty expenses.

Trade discount: Deduction on the catalogue price.

4.5 Terminal Questions

1. Purchases book records ____________________ purchases.
2. Cash purchases are recorded on _____________ side of the cash book.
3. Credit sales are entered in ___________ book.

4. Record a journal entry for drawings made for personal purposes of the business person.
5. What is the type of entry when drawings are made from the bank for office purpose?
6. During the year, suppose the total owner's equity of Beta Co. increased from Rs. 50,000 to Rs. 60000. This is due to earnings made during the year. Is this statement necessarily true?
7. Enter the following transactions in the single column cash book of Gopichand.

March, 2003	
1st. Commenced business with cash	20000
2nd. Bought goods for cash	5000
3rd. Sold goods for cash	4000
4th. Goods purchased from Ravi Kumar	10000
10th. Paid to Ravi Kumar	7000
14th. Cash sales	8000
18th. Purchased furniture for office	4000
22nd. Paid wages	500
25th. Paid rent	600
30th. Received commission	4000
30th. Withdrew for personal purpose	1000
31st. Paid salary	900

8. Record the following transactions in two column cash book (Cash and Bank) in the books of Soft Silk Co., for the month of July, 2004. Find out the closing balances for the month of July 2004.

July, 2004	Rs.
01st. Opening balance b/d (Cash)	14,500
Opening balance b/d (Bank)	7,000
04th. Cash purchases	6,700
05th. Rent for June month paid by cheque	2,500
09th. Cash sales	15,200
12th. Dividend paid by cheque	4,350
15th. Cash deposited into bank	5,000
18th. Cash paid to Rahim Bros to settle his account	10,000
20th. Repairs paid	1,000

22nd. Commission paid by cheque	2,000
23rd. Customer, Deepak remitted to our bank account	20,000
25th. Cash withdrawn from bank for office use	5,000
27th. Drawings made from business cash for personal purposes	2,000
28th. Purchased stationery by cash	3,000
30th. Cash withdrawn for personal use from bank	1,400

9. Prepare three columnar cash book for the month of May.

May 1st	Balance cash in hand Rs.14000; bank overdraft at bank Rs.5000
4th	Invested further capital Rs.10000 out of which Rs.6000 was deposited in the bank
6th	Sold goods for cash Rs.30000
6th	Collected from debtors of last year Rs.80000; Discount allowed to them Rs.2000
10th	Purchased goods for cash Rs.55,000
11th	Paid Ram Vilas, our creditor Rs.25,000; discount allowed by him Rs.650
13th	Commission paid to our agent Rs.5,300
14th	Office furniture purchased for cash Rs.2,000
14th	Rent paid Rs. 400; electricity charges paid Rs.1,000
14th	Drew cheque for personal use Rs.7,000
17th	Cash sales Rs.25,000
18th	Collection from Atal Bihari Rs.40,000, deposited in the bank on 19th April
19th	Drew from the bank for office use Rs.5,000
22nd	Drew cheque for petty expenses Rs.1,500
24th	Dividend received by cheque Rs.500, deposited in the bank on the same day
25th	Commission received by cheque Rs.2,300, deposited in the bank on 28th April
29th	Drew from the bank for salary of the office staff Rs.15,000
30th	Deposited cash in the bank Rs.10,000

10. Prepare petty cash book on imprest system from the following particulars:
    Jan 1st – Received for petty cash payment Rs.500
    Jan 2nd – Paid for postage Rs.40
    Jan 5th – Paid for stationery Rs.25
    Jan 8th – Paid for advertisement Rs. 50
    Jan 12th – Paid for wages Rs.50
    Jan 16th – Paid for carriage Rs.25
    Jan 20th – Paid for conveyance Rs.22
    Jan 25th – Paid for travelling expenses Rs.80
    Jan 27th – Paid for postage Rs.50
    Jan 28th – Paid wages to cleaner Rs.10
    Jan 30th – Paid for telegram Rs.20
    Jan 30th – Sent registered notice Rs.10

4.6 Answers

Self Assessment Questions

1. False
2. False
3. True
4. True
5. False
6. False
7. False
8. True

Terminal Questions

1. Credit
2. Credit
3. Sales Day
4. Drawings A/c Dr.
   To Cash a/c
5. Cash account Dr.
   To Bank account.

6. The statement is true if additional capital is not brought in during the year. Owner's equity increases if profits are added or additional capital is brought in.
7. Cash balance 170000
   Hint: Goods Purchased from Ravi Kumar is a credit purchase.
8. Cash balance 7000, bank balance (debit) 16750
9. Cash balance 59300, bank balance (debit) 25300 , DA 2000, DR 650
10. Balance 18

4.7 Case Study

RD International Ltd. incurred the following transactions for the month of June 2011.

1	Cash in hand, Rs.15,700 , cash at Bank Rs.25,400, and Capital Account Rs.41,100
3	Bought goods for cash Rs.4,100
4	Purchased goods from Meera & Co. for Rs.5,800 less 10% trade discount
7	Sold goods to Bedi & Co. for Rs.5800 less 20% trade discount
9	Withdrew Rs.500 from bank for private use
12	Sold goods to Amjad Khan for Rs. 6,400
15	Paid Rs.5,000 to Meera & Co. in full settlement of their account
18	Goods worth Rs.400 returned by Amjad Khan
20	Received Rs.4000 from Amjad Khan
21	Purchased goods from Shiv Dayal & Co. for Rs.8,700;
23	Rs.6,000 paid to Shiv Dayal & co. by cheque, discount allowed Rs.300
24	Purchased furniture for Rs.800 from Manjeet Furniture House on credit
26	Paid into bank Rs.2,200
28	Amjad Khan declared insolvent; a first and final dividend of 50 paise in a rupee is received from him
29	Goods worth Rs.600 returned to Shiv Dayal & Co
30	Interest on capital provided Rs.411
30	Goods worth Rs.400 taken by the proprietor for his personal use
30	Paid Rs.500 for advertisement by cheque
30	Paid salaries to staff Rs.1,800
30	Cash sales Rs.21,800
30	Paid into bank Rs.21,800
30	Paid into bank Rs.20,000
30	Bought 100 shares in Hind Nil Ltd. at Rs.11 per share, brokerage paid Rs.25
30	Received Rs.5,900 from Bedi & Co., discount allowed Rs.100

You are the newly appointed accountant of the company. The company has asked you to enter all the transactions in the journal and then post them to the ledger.

Source: Narang, K. L & Jain, S. P. Financial Accounting, Kalyani Publishers

Discussion Questions:

1. Would you like to make any suggestions to the company?
2. If yes, what suggestions would you make?
3. How will you record these transactions as per you suggestions? Please show important journal entries, books, and ledger accounts.

Answer to Case Study

1. Yes
2. The company must maintain subsidiary books instead of a single journal.
3. Important journal entries, books, and ledger accounts.

Journal Entries

Date	Particulars	L.F.	Debit Amount Rs.	Credit Amount Rs.
2011 June 24	Furniture Account Dr. To Manjeet Furniture House (Being furniture purchased on credit)		800	800
"28	Bad Debts Account Dr. To Amjad Khan (Being 50% amount due written off as bad debt on Amjad Khan becoming insolvent)		1,000	1,000
	Interest on Capital Account Dr. To Capital Account (Being interest on capital provided)		411	411
	Drawings Account Dr. To Purchases Account (Being goods taken for personal use of the proprietor)		400	400
	Capital Account Dr. To Drawings Account (Being transfer of balance of Drawings Account)		900	900
			3,511	**3,511**

Sales Book

Date	Particulars	L.F.	Details Rs.	Amount Rs.
2011				
June 7	Bedi & Co. goods sold Dr.		8,900	
	Less : 20% trade discount		1,780	7,120
12	Amjad Khan			6,400
30	Total for the month credited to sales account			13,520

Purchases Book

Date	Particulars	L.F.	Details Rs.	Amount Rs.
2011				
June 4	Meera & Co. goods purchased		5,800	
	Less : 10% trade discount		580	5,220
21	Shiv Dayal & Co.			8,700
30	Total for the month debited to purchases account			13,920

Sales Returns Book

Date	Particulars	L.F.	Details Rs.	Amount Rs.
2011				
June 18	Amjad Khan			400
30	Total for the month debited to Sales Returns Amount			400

Cash Book

Dr. Cr.

Date	Particulars	DA Rs.	Cash Rs.	Bank Rs.	Date	Particulars	DR Rs.	Cash Rs.	Bank Rs.
2011									
June 1	To Balance b/d		15,700	25,400	2011				
20	T o Amjad Khan		4,000		June 3	By Purchases A/c		4,100	
26	To Cash			2,200	9	By Drawings A/c			500
28	To Amjad Khan		1,000		15	By Meera & Co.	220	5,000	
30	To Sales A/c		21,800		23	By Shiv Dayal & Co.	300		6,000
30	To Cash			20,000	26	By Bank		2,200	
30	To Bedi & Co.	100	5,900		30	By Advertisement A/c			500
					30	By Salaries			
					30	By Bank		1,800	
					30	By Investment Shares A/c		20,000	
								1,125	
					30	By Balance c/d			
								14,175	40,600
	Total	100	48,400	47,600		Total	520	48,400	47,600
July 1	To Balance b/d		14,175	40,600					

Purchases Account

Dr. Cr.

Date	Particulars	Rs.	Date	Particulars	Rs.
2011			2011		
June 4	To Cash A/c	4,100	June 30	By Drawings	400
30	To Sundry Creditors	13,920	30	By Balance c/d	17,620
	Total	18,020		Total	18,020
July 1	To Balance b/d	17,620			

Sales Account

Dr. Cr.

Date	Particulars	Rs.	Date	Particulars	Rs.
2011			2011		
June 30	To Balance c/d	35,320	June 30	By Sundry Debtors	13,520
			30	By Cash A/c	21,800
	Total	35,320		Total	35,320
			July 1	By Balance b/d	35,320

Sales Returns Account

Dr. Cr.

Date	Particulars	Rs.	Date	Particulars	Rs.
2011 June 30	To Sundry Debtors	400	2011 June 30	By Balance c/d	400
		400			400
July 1	To Balance b/d	400			

Purchases Returns Account

Dr. Cr.

Date	Particulars	Rs.	Date	Particulars	Rs.
2011 June 30	To Balance c/d	600	2011 June 30	By Sundry Creditors	600
		600			600
			July 1	By Balance b/d	600

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Unit 5 Trial Balance

Structure:

5.1 Introduction
Objectives
5.2 Meaning of Trial Balance
5.3 Objectives of Preparing a Trial Balance
5.4 Methods of Preparing a Trial Balance
5.5 Tips for Preparing a Trial Balance
5.6 Adjusting Entries
5.7 Errors and Their Rectification
5.8 Errors Disclosed by Trial Balance
5.9 Errors not Disclosed by Trial Balance
5.10 Steps to Locate the Errors
5.11 Summary
5.11 Glossary
5.12 Terminal Questions
5.13 Answers
5.14 Case Study

5.1 Introduction

In the previous unit we have learnt the first function of accounting, i.e., recording, which is done in journal and subsidiary books. We have also discussed the second function of accounting, i.e., classifying, which is done in the ledger.

The next function of accounting is summarising. As we have understood, the objective of summarising is to know the net result of operations. This requires the preparation of final accounts – profit and loss account and the balance sheet. The preliminary document prepared to facilitate the preparation of financial statements is called trial balance. In this unit, we will learn about trial balance in detail.

Objectives:

After studying this unit, you should be able to:

- explain the meaning of trial balance
- analyse the objectives of preparing a trial balance

- describe the methods of preparing a trial balance
- explain the meaning of adjusting entries
- identify and rectify the errors that are not disclosed by trial balance
- describe the steps to locate the errors
- prepare trial balance after incorporating adjustments

5.2 Meaning of Trial Balance

Trial balance is a statement containing the various ledger balances on a particular date. It is a list of debit and credit totals or a list of debit and credit balances of all the ledger accounts prepared on any particular date.

It is the source document for preparing final accounts i.e., profit and loss account, cash flow statement, and balance sheet.

5.3 Objectives of Preparing a Trial Balance

Objectives of preparing a trial balance are as follows:

- To check the arithmetic accuracy of the entries made. In double entry, every debit has an equivalent credit. So if the debits and credits do not tally in a trial balance, it indicates that the books of account are not arithmetically accurate.
- To identify and rectify errors in the books of accounts.
- To prepare trading account, profit and loss account, and balance sheet.
- It is a summarised ledger.

5.4 Methods of Preparing a Trial Balance

There are two methods of preparing a trial balance. They are:

- Totals method
- Balance method

In the totals method, the totals of debits and credits of every account are shown in the trial balance.

Pro-forma of Trial Balance under Totals Method

TRIAL BALANCE As On _________

Debit Totals	Rs.	Credit Total	Rs.
Total		Total	

In the balance method, the net balance of every ledger account is taken.

Pro-forma of Trial Balance under Balance Method

TRIAL BALANCE as on _________

Accounts	**Debit balances Rs.**	**Credit balances Rs.**
Total		

The balance method gives a gist of the account and hence the second method is popular.

5.5 Tips for Preparing a Trial Balance

The following hints must be remembered for preparing a trial balance.

- Assets have debit balance
- Liabilities have credit balance
- Expenses and losses have debit balance
- Incomes and gains have credit balance
- Capital has credit balance
- Drawings have debit balance

Illustration 1:

The following are the ledger accounts of Mr. X as on 31st December, 1998. Prepare a trial balance.

Dr. Cash Account Cr.

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1-4-04	To Balance b/d	50,000	6-4-04	By Cash	5,000
2-4-04	To Sales	45,000	10-4-04	By Kumar	29,000
16-4-04	To Mohan	35,000	14-4-04	By Purchases	50,000
26-4-04	To Sales	10,000	18-4-04	By Creditors	20,000
			20-4-04	By Furniture	5,000
			22-4-04	By Wages	500
				By Printing	1,000
				By Commision	2,000
			30-4-04	By Electricity	500
				By Telephone	1,000
				By Salaries	4,000
				By Balance c/d	22,000
		1,40,000			**1,40,000**

1-5-04 To Balance b/d 22,000

Building Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1-4-04	To Balance b/d	2,00,000	30-4-04	By Balance c/d	2,00,000

1-5-04 To Balance b/d 2,00,000

Furniture Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1-4-04	To Balance b/d	10,000	30-4-04	By Balance c/d	15,000
20-4-04	To Cash	5,000			
		15,000			15,000

1-5-04 To Balance b/d 15,000

Bank Fixed Deposit Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1-4-04	To Balance b/d	1,00,000	30-4-04	By Balance c/d	1,07,000
12-4-04	To Interest	7,000			
		1,07,000			1,07,000
1-5-04	To Balance b/d	1,07,000			

Stock Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
1-4-04	To Balance b/d	25,000	30-4-04	By Balance c/d	25,000
1-5-04	To Balance b/d	25,000			

Creditor's Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
18-4-04	To Cash	20,000	1-4-04	By Balance b/d	35,000
30-4-04	To Balance c/d	15,000			
		35,000			35,000
			1-5-04	By Balance b/d	15,000

Capital Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To Balance c/d	3,50,000	1-4-04	By Balance b/d	3,50,000
		35,000			3,50,000
			1-5-04	By Balance b/d	3,50,000

Purchases Account

Date	Particulars	Amount Rs,	Date	Particulars	Amount Rs.
4-4-04	To Kumar	30,000	30-4-04	By Balance c/d	95,000
14-4-04	To Cash	50,000			
	To Sarin	15,000			
		95,000			95,000
1-5-04	To Balance b/d	95,000			

Sales Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To Balance c/d	95,000	2-4-04 8-4-04 26-4-04	By Cash By Mohan By Cash	45,000 40,000 10,000
		95,000			95,000
			1-5-04	By balance b/d	95,000

Kumar Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
10-4-04	To Cash To Discount	29,000 1,000	4-4-04	By Purchases	30,000
		30,000			30,000

Note: There is no balance and hence his account will not appear in trial balance

Repairs Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
6-4-04	To Cash	5,000	30-4-04	By Balance c/d	5,000
		5,000			5,000
1-5-04	To Balance b/d	5,000			

Mohan Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
8-4-04	To Sales	40,000	16-4-04 30-4-04	By Cash By Balance c/d	35,000 5,000
		40,000			40,000
1-5-04	To Balance b/d	5,000			

Discount Received Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To Balance c/d	1,000	10-4-04	By Kumar	1,000
		1,000			1,000
			1-5-04	By Balance b/d	1,000

Interest on Fixed Deposit Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To Balance c/d	7,000	12-4-04	By Bank FD	7,000
		7,000			7,000
			1-5-04	By Balance b/d	7,000

Wages Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
22-4-04	To Cash	500	30-4-04	By Balance c/d	500
		500			500
1-5-04	To Balance b/d	500			

Printing Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
22-4-04	To Cash	1,000	30-4-04	By Balance c/d	1,000
		1,000			1,000
1-5-04	To Balance b/d	1,000			

Commission Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
22-4-04	To Cash	2,000	30-4-04	By balance c/d	2,000
		2,000			2,000
1-5-04	To balance b/d	2,000			

Electricity Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To Cash	500	30-4-04	By balance c/d	500
		500			500
1-5-04	To balance b/d	500			

Telephone Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To Cash	1,000	30-4-04	By balance c/d	1,000
		1,000			1,000
1-5-04	To balance b/d	1,000			

Salaries Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To Cash	4,000	30-4-04	By balance c/d	4,000
		4,000			4,000
1-5-04	To balance b/d	4,000			

Sarin's Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
30-4-04	To balance c/d	15,000	28-4-04	By Purchases	15,000
		15,000			15,000
			1-5-04	By balance b/d	15,000

Solution:

TRIAL BALANCE AS ON 30TH APRIL, 2004

Debit balances	Amount Rs.	Credit balances	Amount Rs.
Cash	22,000	Creditors	15,000
Building	2,00,000	Capital	3,50,000
Furniture	15,000	Sales	95,000
Bank FD	1,07,000	Discount received	1,000
Stock	25,000	Interest on FD	7,000
Purchases	95,000	Sarin	15,000
Repairs	5,000		
Mohan	5,000		
Wages	500		
Printing	1,000		
Commission	2,000		
Salaries	4,000		
Telephone	1,000		
Electricity	500		
Total	**4,83,000**	**Total**	**4,83,000**

5.6 Adjusting Entries

Adjusting entries are journal entries passed for making some adjustments in the books. There will not be a business transaction.

- Opening journal entries
- Closing entries
- Transferring entries

Illustration 2: On 31st December, 2004, the following were the assets and liabilities of a firm:

(1) Cash at bank – Rs. 50000
(2) Furniture – Rs. 48000
(3) Plant and machinery – Rs.200000
(4) Debtors – Rs.100000
(5) Stock in trade – Rs. 20000
(6) Creditors – Rs. 50000
(7) Bank loan – Rs. 45000

On 1st January, 2005, the assets and liabilities have to be brought in. The following entry is recorded in the journal proper.

Date	Particulars		Ledger Folio	Debit Rs.	Credit Rs.
1-1-05	Cash at Bank A/c	Dr		50000	
	Furniture A/c	Dr		48000	
	P and M A/c	Dr		200000	
	Debtor's A/c	Dr		100000	
	Stock in trade A/c	Dr		20000	
	To Creditors A/c				50000
	To Bank Loan A/c				45000
	To Capital A/c (Difference)				323000
	(Being assets and liabilities of the previous year brought in)				

Similarly, a newly set up business may commence its activities with some assets and liabilities. Then the assets are debited and liabilities are credited and the difference is transferred to capital account.

Opening journal entries

In the case of running business, all the assets and liabilities of the previous year should be brought down to the current year. Therefore, an entry is drawn debiting all assets account individually and crediting liabilities account individually and the difference being credited to capital account.

Closing entries

Closing entries are passed at the end of accounting period. All expenses and income accounts are closed by transferring them to the respective

revenue accounts, such as trading account and profit and loss account. The accounts of assets and liabilities will not be closed because they continue to exist further.

Example:

Salaries paid during the year are closed by transferring to P & L account
P & L account Dr
To Salaries' account.

After the closure of accounting year, there might be a few more transactions, which are not incorporated into the journal or ledger, owing to omission and practical difficulties. For example, closing stock should be valued on the last day of the accounting period.

Transferring entries

When the balance of one account is transferred to another account, transferring entry is made.

For instance: Drawings made by the proprietor are credited to capital account.

5.7 Errors and Their Rectification

An error is an unintentionally committed mistake. If the trial balance does not tally (i.e., if the total of debit balances is not equal to the total of credit balances) it is a clear indication that there are some errors in the preparation of accounts. The errors may be committed at various stages –

- Journalising
- Posting
- Casting (totalling)
- Balancing
- Transferring to trial balance

However, a mere tallying of the trial balance does not ensure an error free statement. There are certain errors such as errors of omission, error of principle, and compensating errors, which are not disclosed by trial balance. Whereas errors of casting, posting to wrong side of an account or posting a wrong amount can be detected by trial balance. Figure 5.1 depicts the types of errors.

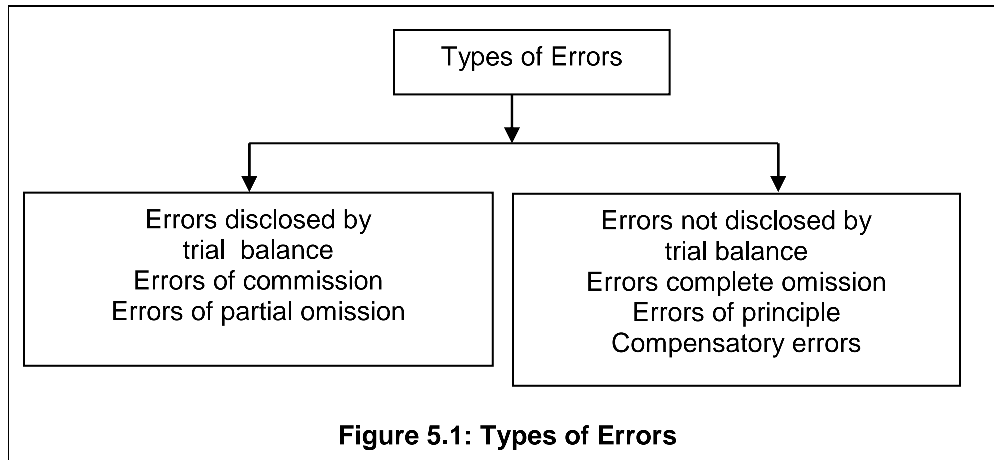


Figure 5.1: Types of Errors

Rectification of errors

It is the process of correcting the mistakes done in the books of accounts.

Errors either disclosed or not disclosed by trial balance, have to be corrected or rectified in order to obtain the correct picture of profit or loss and financial position.

5.8 Errors Disclosed by Trial Balance

The errors that are disclosed by trial balance can be easily located. If the trial balance does not tally, the accountant has to proceed with spotting errors. For this purpose a temporary account called Suspense account is opened. To this account total amount of difference in the trial balance is transferred**.** The balance in the account can be mitigated as and when the errors get rectified. Therefore, the suspense account gets debited or credited as the case may be on rectification of these types of errors. The following are the errors which are disclosed by trial balance.

1. **Posting a wrong amount**
   This mistake may occur while posting an entry from subsidiary book to ledger.

Example: Cash received from Rama Rs. 1150 is posted to Rama's ledger account as Rs. 1500, while it is correctly recorded in cash account.

RAMA'S ACCOUNT

		By cash a/c	1500

Wrong amount

Rectification entry

Rama's account Dr. Rs. 350

To suspense account Rs. 350

Being excess credit given to Rama's account rectified

2. **Posting to the wrong side of an account**

   This error is committed while posting entries from subsidiary books to ledger.

Example: Sales made to Krishna Rs. 5000 is transferred to the credit side of Krishna's account in the ledger.

KRISHNA'S ACCOUNT

		By sales a/c	5000

Rectification entry:

Krishna's account Dr. Rs. 10000

To suspense account Rs. 10000

Being excess in Krishna's account rectified

3. Totalling incorrectly

Both under casting and over casting are detected by trial balance. If any account is totalled incorrectly, it is reflected in the trial balance.

Example: Purchases book total is Rs. 5800. If it is totalled as Rs. 5700 or Rs. 5900, the difference will be shown in the trial balance.

PURCHASE BOOK

ABC ltd	xxxx
MNC ltd	xxxx
PQR ltd	xxxx
Total	5800

TRIAL BALANCE

	Debit	Credit
Cash	xxx	
Sales		xxxx
Purchase	5700	

WRONG AMOUNT

4. Failing to post an entry from the subsidiary book to the ledger

If an entry made in the subsidiary book does not get posted to the ledger, the trial balance will not tally.

Example: Rent paid Rs. 2000 is recorded in cash account but is not posted to the rent account at all.

RENT ACCOUNT

To cash a/c (Omitted)	2000		

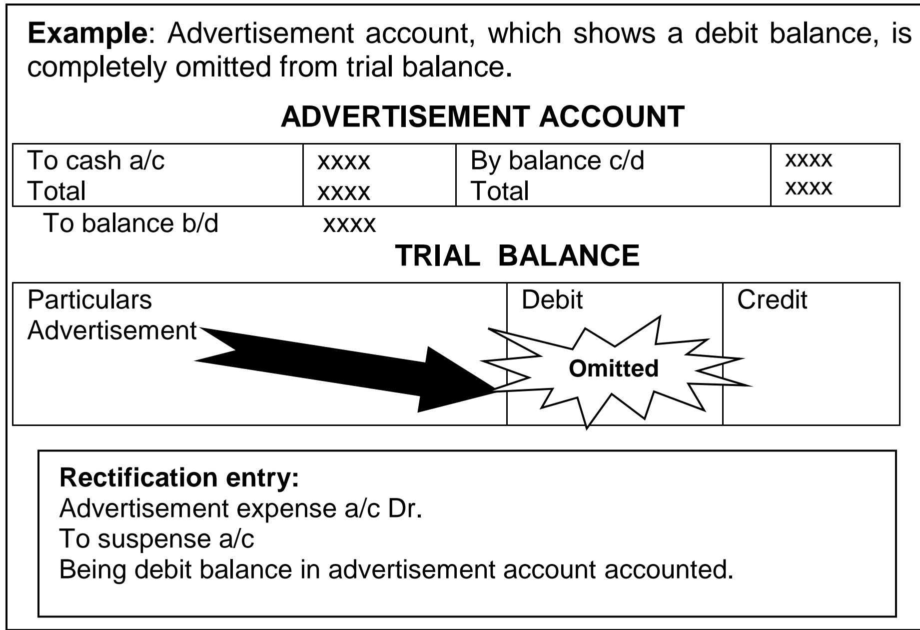
Rectification Entry:

Rent a/c Dr. Rs. 2000

To suspense a/c Rs. 2000

Being the error of failing to post rent paid in rent account rectified.

5. Omitting an account altogether from being shown in the trial balance



Example: Advertisement account, which shows a debit balance, is completely omitted from trial balance.

ADVERTISEMENT ACCOUNT

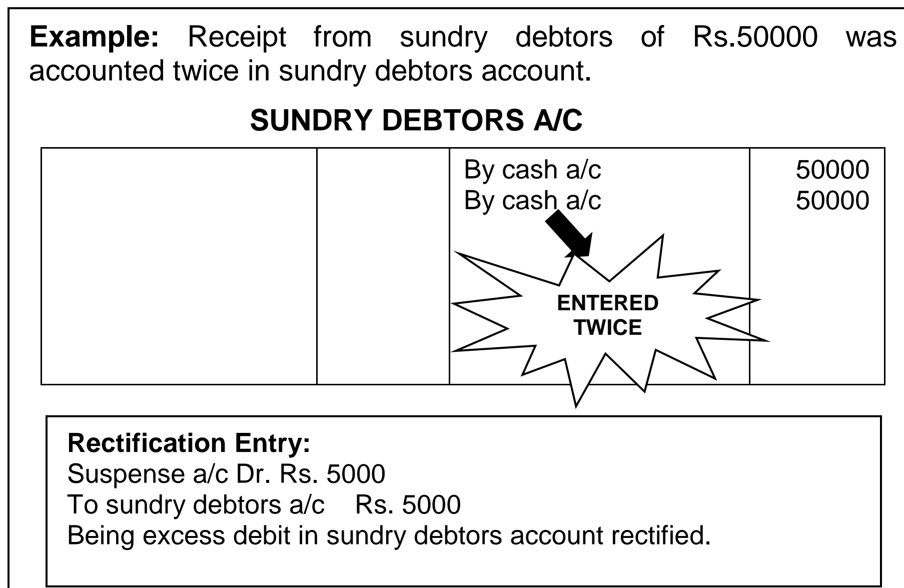
To cash a/c Total	xxxx xxxx	By balance c/d Total	xxxx xxxx
To balance b/d	xxxx		

TRIAL BALANCE

Particulars	Debit	Credit
Advertisement		

Rectification entry:
Advertisement expense a/c Dr.
To suspense a/c
Being debit balance in advertisement account accounted.

6. **Posting an amount to a correct account more than once**
This results in an imbalance in the trial balance.



Example: Receipt from sundry debtors of Rs.50000 was accounted twice in sundry debtors account.

SUNDRY DEBTORS A/C

		By cash a/c By cash a/c	50000 50000

Rectification Entry:
Suspense a/c Dr. Rs. 5000
To sundry debtors a/c Rs. 5000
Being excess debit in sundry debtors account rectified.

7. Posting an item to the same side of two different ledger accounts

If two accounts are debited or credited for the same transaction, this type of error occurs.

Example: Furniture purchased should be debited to furniture account only. If it is posted to furniture account and purchases account, then the difference arises in the trial balance.

FURNITURE ACCOUNT

		By cash a/c	xxxxx

PURCHASE ACCOUNT

		By cash a/c	xxxxx
		Omitted	

Rectification entry:
Suspense a/c Dr. xxxxx
To purchase a/c xxxxx
Being wrong debit given to purchase account rectified.

Activity 1:

1. Telephone expenses of Rs. 2500 is entered in cash account but not posted to the ledger. How do your rectify?
2. Interest paid on loan of Rs. 2116 is wrongly posted twice in the interest account, first as Rs. 2611 and second as Rs. 2161. How do you rectify this transaction?

Activity 1: Solution

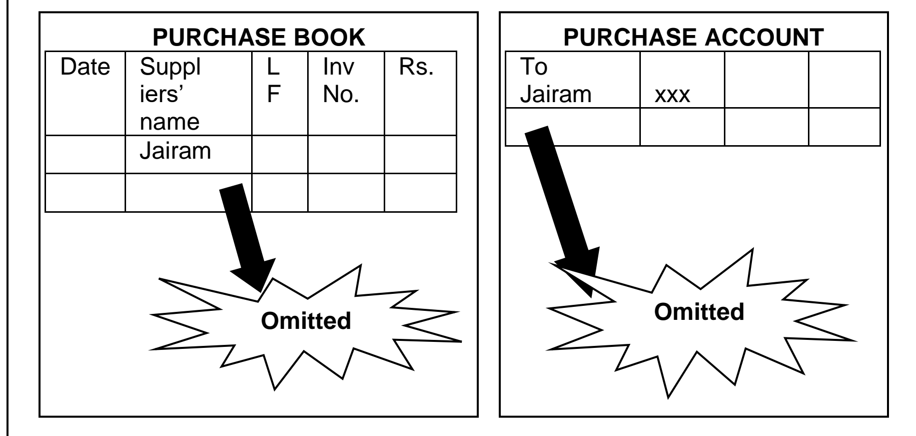
1. Telephone Expense a/c Dr 2500 To Suspense a/c 2500 (Being telephone expenses omitted in ledger accounted)	**2.** **To rectify the first posting the entry is:** Suspense a/c Dr.495 To Interest paid a/c 495 Being excess debit (2611-2116) in interest a/c rectified. **To rectify the second posting the entry is:** Suspense a/c Dr.2161 To Interest paid a/c 2161 Being excess debit in interest paid a/c rectified. **The two entries can be clubbed as:** Suspense a/c Dr.2656 To Interest paid a/c 2656 Being excess debit in interest paid a/c (495 + 2161) rectified.

5.9 Errors not Disclosed by Trial Balance

There are four errors which do not affect trial balance and it is difficult to locate them. A brief description of the four errors is offered in the following paragraphs.

1. ***Error of complete omission –*** Error of omission occurs when a transaction is completely omitted from the books of accounts.

Example: If purchase of goods from Jairam on credit is not recorded either in the general journal or in the purchases book, it is termed as error of omission.



Since both aspects – debit and credit – of the transaction are missing, the trial balance is not affected at all. To rectify such errors, the transaction should be recorded when it is traced.

2. ***Error of commission –*** If the errors wrong posting, wrong casting, wrong calculation etc., are committed in the books of original entry or ledger, it is said to be error commission.

Example: Purchase invoice of Rs.1730 may have been entered as Rs.1370 in the purchases book itself, then, in the subsequent ledger accounts the same mistake continues and thereby cannot be disclosed by trial balance.

The difference of Rs.360 (1730-1370) should be added to purchases account and to the respective supplier's account.

PURCHASE BOOK

Date	Suppliers' name	LF	Inv No.	Rs.
	XXX			**1370**

Correct amount is Rs.1730

PURCHASE ACCOUNT

To xxx	**1370**		

Correct amount is Rs.1730

The error can be detected only when the original invoice is referred to after getting the complaint from the supplier.

Rectification entry:
Purchases a/c Dr. Rs. 360
To suppliers a/c Rs. 360
Being deficit amount added to rectify the account.

3. ***Error of principle* –** While drawing journal entries, often error of principle is committed and this goes unnoticed because it does not affect the total of trial balance.

Example:

Wages paid to workers engaged in the construction of building????

- Wages paid to workers engaged in the construction of building should be debited to building account and not wages account.
- If the building account is debited, the value of the asset appears in the balance sheet and the expenditure is actually capitalised.
- In case the wages are treated as usual revenue expenditure, they are deducted from profit.
- The error here is wages account is debited and not building account.

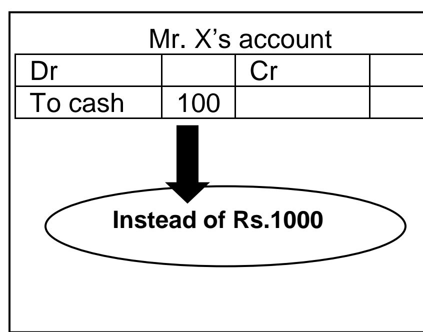
Rectification Entry:
Building a/c Dr.
To wages a/c
Being wrong debit given to wages account rectified.

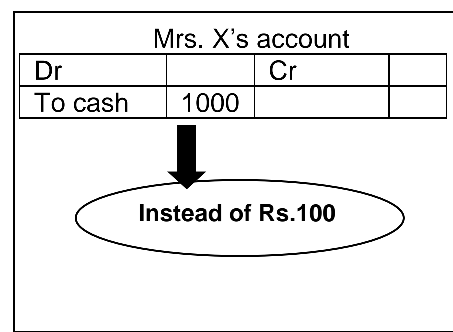
Similarly, treating income as liabilities, providing insufficient provision for bad and doubtful debts, inadequate depreciation against assets, etc. come under errors of principle. They must be rectified by applying the correct principles of accounting.

4. ***Compensating errors —*** It is also called off-setting error. Compensating error is one which is counter balanced by another error.

Example:

- Mr. X account was debited Rs. 100 as against Rs.1000 while the account of Mrs. X account was debited Rs.1000 as against the correct amount of Rs. 100.
- The first error is compensated by the second error and therefore the trial balance is not affected. This comes to light only at a later stage or on receipt of the complaint.





Rectification entry:
Mr. X's account Dr. 900
To Mrs. X's account Rs. 900
Being deficit amount debited in Mr. X's account and excess amount debited in Mrs. X's account rectified.

5.10 Steps to Locate the Errors

The following steps help to locate the errors. In spite of the efforts, if the difference in the trial balance persists, a suspense account may be created and subsequently the suspense account can be eliminated as and when the errors are located and rectification is made.

- Check the total on both debit side and credit side of the trial balance.
- Check the total of debtors and creditors accounts.
- Find out whether all ledger balances are carried to trial balance.
- Verify the total of all the ledger accounts.
- Divide the amount of difference in the trial balance by 2 and see if

any item of the debit or credit side equal to that amount has been posted to the opposite side.
- Check whether the opening balances are brought down correctly from the previous accounting period.
- Compare with trial balance of the previous year to find out if there are any items missing.
- Where the difference in the trial balance is divisible by 9 then the difference is likely to be due to misplacement of figures like 12 for 21, 24 for 42, 36 for 63, etc.

When errors are located, they should be rectified by passing rectification entries and not by overwriting. Rectification entries are recorded in general journal or journal proper.

Self Assessment Questions

1. All revenue accounts are closed at the end of an accounting period. (True/False)
2. Assets and liabilities accounts are closed at the end of accounting year. (True/False)
3. Error of principle is not disclosed by trial balance. (True/False)
4. Error of commission is disclosed by trial balance. (True/False)
5. Suspense account is the difference between debit total and credit total of a trial balance. (True/False)
6. The sum of errors in accounting is transferred temporarily to _________ account.
7. The book in which rectification entries are passed is ____________.

Identify the type of error

8. Amount paid to Rama Rs.500 is credited to Ramanan's accounts.
9. Wages paid Rs.500 is recorded as Rs.150000.
10. Wages of Rs.500 paid for installation of machinery is debited to Wages a/c.
11. Furniture purchased for cash Rs.5000 is not recorded in the journal. _______

Suggest the rectification entry in each case

12. Sales account is under cast by Rs. 45.
13. Returns inwards book is over cast by Rs. 9.
14. Salary paid to Gopal is debited to his personal account.
15. Discount received Rs.50 is transferred to the debit side of discount account.
16. An invoice of purchase for Rs.760 is entered as Rs.670.

Illustration 3:

An accountant finds that the trial balance of his client did not tally and it showed an excess credit of Rs. 69.74. He transferred it to a suspense account and later discovered the following errors.

a) Rs. 44.37 paid to Anand has been credited to his account as Rs. 34.37.
b) A purchase of Rs. 145.50 has been posted as Rs. 154.50 to the purchases account.
c) An expenditure of Rs. 158 on repairs has been debited to the buildings account.
d) Rs. 80 was allowed by B as discount which has not been entered in the books.
e) A sum of Rs. 125.05 realised on the sale of old furniture has been posted to the sales account.

Give journal entries to rectify the errors and show the suspense account as it would appear after adjustments.

Solution:

Date	Particulars	LF	Debit (Rs.)	Credit (Rs.)
1	Anand's account Dr To suspense account (Being wrong amount, wrongly credited to Anand's a/c rectified) Suspense account Dr		78.74	78.74
2	To Purchases account (Being over debit of purchase a/c rectified)		9.00	9.00

3	Repairs account Dr To Buildings account (Being wrong debit given to building account rectified)		158.00	158.00
4	B's account Dr To Discount received a/c (Being discount received from B, omitted earlier, brought to account)		80	80
5	Sales account Dr To old furniture account (Being sale of old furniture wrongly transferred to sales account rectified)		125.05	125.05

Suspense Account

Date	Particulars	Amount Rs.	Date	Particulars	Amount Rs.
	To Difference in trial balance To Purchases a/c	69.74 9.00		By Anand's a/c	78.74
		78.74			78.74

Note:

1. The entry should have been:

Anand's a/c Dr. 44.37 To Cash a/c Rs.44.37 Being cash paid to Anand accounted

When amount is paid to Anand, his account should have been debited. On the other hand, his account was credited for a wrong amount of Rs. 34.37. Hence there has been excess credit to the extent of Rs. 78.74 (44.37 + 34.37). To rectify this double error we need to debit Anand's account to the extent of Rs.78.74 and credit suspense account.

2. Purchases account was over debited by Rs. 9 (Rs. 154.50 – Rs. 145.50). To rectify this error we need to credit purchase account to the extent of Rs.9 and debit suspense account.
3. Repairs spent on building are by mistake debited to building account. This is error of principle. Repairs account is debited and buildings account is credited to rectify the error.
4. Discount received from B has not been taken to records. This is an error of omission. Therefore, it is now brought to accounts. This has not affected the trial balance.
5. When old furniture is sold, the furniture account should have been credited. On the other hand, sales account was credited against the principle of accounting. To rectify the error, sales account is debited and old furniture account is credited.

Illustration 4:

The trial balance of Evergreen Co Ltd., as taken on 31st December, 2002 did not tally and the difference was carried to suspense account. The following errors were detected subsequently.

a) Sales book total for November was under cast by Rs. 1200.
b) Purchase of new equipment costing Rs. 9475 has been posted to Purchases a/c.
c) Discount received Rs.1250 and discount allowed Rs. 850 in September 2002 have been posted to wrong sides of discount account.
d) A cheque received from Mr. Longford for Rs. 1500 for goods sold to him on credit earlier, though entered correctly in the cash book has been posted in his account as Rs. 1050.
e) Stocks worth Rs. 255 taken for use by Mr Dayananda, the Managing Director, have been entered in sales day book.
f) While carrying forward, the total in Returns Inwards Book has been taken as Rs. 674 instead of Rs. 647.
g) An amount paid to cashier, Mr. Ramachandra, Rs. 775 as salary for the month of November has been debited to his personal account as Rs. 757.

Pass journal entries and draw up the suspense account.

Solution:

Journal Proper of Evergreen Co Ltd.

Date	Particulars	LF	Debit Rs.	Credit Rs.
31-12-2002	Suspense account Dr To Sales account (Being under casting of sales book rectified)		1,200	 1,200
31-12-2002	New Equipment account Dr To Purchases account (Being wrong debit given to purchases account rectified)		9,475	 9,475
31-12-2002	Discount allowed account Dr Suspense account Dr To Discount received account (Being discount received and discount allowed posted to wrong sides of discount account rectified)		1,700 800	 2,500
31-12-2002	Suspense account Dr To Longford's account (Being short credit given to Longford rectified)		450	 450
31-12-2002	Sales account Dr To Suspense account (Being stock used for personal purpose wrongly credited to sales account rectified)		255	 255
31-12-2002	Suspense account Dr To Returns Inwards account (Being excess debit given to returns inwards account to the extent of Rs27, now rectified)		27	 27
31-12-2002	Salary account Dr To Ramachandra's account To Suspense account (Being the wrong debit of salary to the personal account of Ramachandra now rectified)		775	 757 18

Note:

In illustration 4 sub question (c): Discount received Rs.1250 is posted on the wrong side of discount account. Discount received (income) should be credited and discount allowed (expenses) should be debited. Instead of crediting the discount received account, it has been wrongly debited. To rectify this error, we need to credit discount received account to the extent of Rs.2500 (Rs.1250+ Rs.1250).

In the same context, discount allowed (which is an expense) should be debited, instead it is credited. To rectify the error, we need to debit discount allowed to the extent of Rs.1700 (850 +850). The difference between discount received and discount allowed account is transferred to suspense account.

Dr SUSPENSE ACCOUNT Cr

Particulars	**Amount Rs.**	**Particulars**	**Amount Rs.**
To Sales account	1,200	By Sales	255
To Discount received a/c	800	By Salary	18
To Longford	450	By Balance c/d	2,204
To Returns Inwards a/c	27		
Total	**2,477**	Total	**2,477**

5.11 Summary

Let us recapitulate the important concepts discussed in this unit:

- Trial balance is a list of debit and credit totals or a list of debit and credit balances of all the ledger accounts prepared on any particular date to verify whether the entries in books of accounts are authentically correct.
- As the primary and secondary books are maintained on the double entry concept, the balances in the trial balance must tally.
- Totals method and balance method are the two techniques of preparing trial balance. In the first method, the totals of debits and credits of every account are shown in the trial balance.
- GAAP supports financial accounting to use accrual basis of accounting. Under accrual basis of accounting, revenues are recognised when earned without regard to the timings of cash receipts.

- Expenses are recognised when incurred without regard to the timings of cash disbursement

5.12 Glossary

Accounting error: A mistake in the books of accounts.

Compensatory errors: Two errors which offset the effect of each other.

Error of commission: Errors like wrong totalling, wrong balancing, posting of wrong amount, and posting on wrong side.

Error of principle: Not following an accounting principle.

Rectification: The process of correcting the accounting error.

Trial balance: A list of all ledger account balances as on a given date.

5.13 Terminal Questions

1. Prepare a trial balance from the following

Particulars	**Amount Rs.**	**Particulars**	**Amount Rs.**
Drawings	10,000	Interest on investments	200
Stock on 1—1-92	46,000	Sundry Debtors	36000
Purchases	1,50,200	Sundry Creditors	29,000
Purchases return	600	Wages	25,000
Cash in hand	3400	Salaries	14,000
Bank Balance	22660	Capital	1,14,000
Freehold expenses	38600	Income tax	1600
Trade expenses	840	Discount allowed	6300
Printing Stationery and advertisement	1640	Discount received	4600
Professional charges	280	Sales	2,08,950
Commission received	3300	Sales return	550
Investments as on 1st Jan @ 10%	4000	Bills receivable	3200
Office furniture	3050	Bills payable	10000
Rent rates and insurance	4000	Provision for bad debts	670
Total	371320	Total	371320

2. The following trial balance was extracted from the books of Chetan, a small businessman. Do you think it is correct? If not, rewrite it in the correct form.

Debits	Rs.	Credits	Rs.
Stock	8250	Capital	10000
Purchases	12750	Sales	15900
Returns outwards	700	Returns inwards	1590
Discount received	800	Discount allowed	800
Wages and salaries	2500	Scooty	1750
Rent and rates	1850	Carriage charges	700
Sundry debtors	7600	Sundry creditors	7250
Bank Overdraft	2450	Bills payable	690

3. Rectify the following errors:
   a. Purchases from Padma Rs.191 posted to her account as Rs.119
   b. Purchases from Lata credited to her account as Rs.117
   c. Salaries Rs.400 posted to salaries account as Rs.300
   d. A cash sales of Rs.430 to Rita posted as Rs.43

5.15 Answers

Self Assessment Questions

1. True
2. False
3. True
4. True
5. True
6. Suspense a/c
7. Journal proper
8. Error of commission
9. Error of commission
10. Error of principle
11. Error of complete omission
12. Suspense a/c 45
    To sales a/c 45
13. Suspense a/c 9
    Sales returns a/c 9

14. Salaries a/c
    To Gopal a/c
15. Suspense a/c 100
    Discount a/c 100
16. Purchases a/c 90
    To Suspense a/c 90

Terminal Questions

1. Trial balance total - 371320
2. Trial balance total - 37790

Suspense a/c Dr. 72 To Padma's a/c 72 Being wrong posting in Padma's a/c rectified.	Salary a/c Dr 100 To Suspense a/c 100 Being salary amount debited by additional amount.
Suspense a/c Dr. 54 To Lata's a/c 54 Being wrong posting in Lata's a/c rectified.	Suspense a/c Dr 387 To Sales a/c 387 Being entry in sales account rectified.

5.14 Case Study

Trail Balance

The trial balance of RN is given below.

Trial Balance, 30 April, 2011

Account	Debit balances Rs.	Credit balances Rs.
Equipment	16,800	
Supplies	1,740	
Debtors	7,100	
Cash	13,400	
Creditors		
Share Capital		1,900
Revenue from Services		15,000
Salaries Expense	120	16,020
Electricity Expense	270	
Telephone Expense	900	
Rent Expense	250	
Total	40,580	32,920

Mr. RN was displeased with the difference in the trial balance and asked his accountant to make a through check of the books.

The account's thorough check revealed the following errors:

(a) A purchase of supplies of Rs.180 was posted as credit to Supplies.

(b) On computing the balance of Debtors, a debit of Rs.1,700 was omitted.

(c) The totalling of credits to Debtors was understated by Rs.900.

(d) A cash payment of Rs.2,700 was recorded as a debit of Rs.7,200 to cash.

(e) The balance of Salaries Expense was Rs.1,200.

Mr. RN has requested you to suggest corrections and prepare a corrected trial balance.

- Source : *Narayanaswamy, R., Financial Accounting, A Managerial Perspective 3/e, PHI*

Answer to Case Study

The required corrections are as follows:

(a) Supplies: This error had the effect of reducing the balance in the account by twice that amount. So add Rs.360.

(b) Debtors: Add the omitted debit of Rs.1,700 to the balance.

(c) Debtors: Deduct short credit of Rs.900.

(d) Cash: Deduct wrong debit of Rs.7,200 and correct credit of Rs.2,700.

(e) Salaries Expense: Copy the correct balance of Rs.1,200 to the trial balance.

The corrected trial balance.

Trial Balance, 30th April, 2011

Account	Debit balances Rs.	Credit balances Rs.
Equipment	16,800	
Supplies (Rs.1,740 + Rs.360)	2,100	
Debtors (Rs.7,100 + Rs.1,700 – Rs.900)	7,900	
Cash (Rs.13,400 – Rs.2,700 – Rs.7,200)	3,500	
Creditors		1,900

Share Capital		15,000
Revenue from Services		16,020
Salaries Expense	120	
Electricity Expense	270	
Telephone Expense	900	
Rent Expense	250	
Total	32,920	32,920

References:

- Narayanaswamy, R., *Financial Accounting, A Managerial Perspective 3/e*, PHI
- Jain, S. P. & Narang K. L., *Financial Accounting*, Kalyani Publishers

E-Reference:

- www.phindia.com/narayanaswamy – retreived on December 22nd 2012

Unit 6 Final Accounts

Structure:

6.1 Introduction
Objectives
6.2 Components of Final Accounts
Trading and profit and loss account
Balance sheet
6.3 Adjustments
Outstanding expenses
Prepaid expenses
Incomes received in advance
Accrued incomes
Depreciation
Bad debts and accounting treatment of bad debts
Provision for doubtful debts
Reserves for discount on debtors
Reserves for discount on creditors
Closing stock
6.4 Adjusted Trial Balance
6.5 Final Accounts of Joint Stock Companies
6.6 Summary
6.7 Glossary
6.8 Terminal Questions
6.9 Answers
6.10 Case Study

6.1 Introduction

In the previous units we have understood the first two functions of accounting.

- Recording – through journal and subsidiary books
- Classifying – through ledger accounts

In this unit, we will understand the next function of accounting, i.e., summarising. The end objective of any business is profit. All the stakeholders would like to know whether all the transactions incurred throughout an accounting period resulted in profit or loss for their business.

This process of taking a summary of all transactions incurred during an accounting period with the objective of knowing the net result of all such transactions is called summarising.

Summarising can be done by preparing the following two statements.

- Profit and loss account
- Balance sheet

These two statements together comprise the final accounts. They are called final accounts as they are prepared at the end of the accounting period. They are also popularly called financial statements.

In this unit, we will learn how to prepare the final accounts.

Objectives:

After studying this unit, you should be able to:

- describe the meaning of final accounts and appreciate the need for and importance of final accounts
- describe the components and structure of final accounts
- prepare the final accounts from a given trial balance
- analyse adjustments and the different types of adjustments
- identify how to incorporate adjustments into final accounts through adjusted trial balance and also directly in the final accounts
- analyse the features of and prepare the final accounts of joint stock companies

6.2 Components of Final Accounts

As mentioned earlier, final accounts have two components.

- Profit and loss account
- Balance sheet

Let us discuss the two components in detail.

Profit and loss account

It is a statement prepared in order to know the financial performance (profit or loss) for an accounting period (usually one year). This statement basically shows the net effect of total revenues and total expenses.

That is,

Profit = Total revenues - Total expenses

If the total revenues are more than total expenses there is profit.

If the total expenses are more than total revenues there is loss.

6.2.1 Trading and Profit and loss account has the following two sections

- Trading account
- Profit and loss account

Let us now discuss the two sections in detail.

Trading account

It shows the gross profit or gross loss arising out of trading activities. Trade means buying and selling. The trading account shows the results of core operations of the business i.e., buying and selling. The expenses related to core operations of the business are called direct expenses and the incomes arising out of core operations of the business are called direct incomes. The excess of direct incomes over direct expenses is called gross profit and excess of direct expenses over direct incomes is called gross loss. The gross profit or gross loss is transferred to the profit and loss account.

The format of a trading account is given below:

Dr Trading Account for the year ending- - - - Cr

Particulars	Rs.	Particulars	Rs.
To opening stock		By sales	
To purchases		Less returns inwards/sales returns	
Less purchase returns/returns outwards		By closing stock	
To carriage inwards			
To freight and octroi			
To wages			
Add outstanding wages			
Less prepaid wages			
To fuel and power			

To gas, coal, electricity for production			
To import duty and clearing charges			
To stores consumed			
To factory rent, insurance, factory expenses			
To other direct expenses			
To royalty paid			
To profit and loss a/c (gross profit)			

Illustration 1: For the following balances extracted from a trial balance, prepare a trading account.

Particulars	**Amount in Rs.**
Stock on 1-1-2004	70700
Returns inwards	3000
Returns outwards	3000
Purchases	102000
Debtors	56000
Creditors	45000
Carriage inwards	5000
Carriage outwards	4000
Import duty on materials received from abroad	6000
Clearing charges	7000
Rent of business shop	12000
Royalty paid to extract materials	10000
Fire insurance on stock	2000
Wages paid to workers	8000
Office salaries	10000
Cash discount	1000
Gas, electricity, and water	4000
Sales	250000

Solution

Dr Trading Account For the Year Ending - - - Cr

Particulars	Rs.	Particulars	Rs.
To stock on 1-1-2004	70700		
To Purchases 102000 (-) Returns Outwards 3000	99000	By sales 250000 (-) Returns Inwards 3000	247000
To Carriage inwards	5000		
To Import duty	6000		
To Clearing charges	7000		
To Royalty	10000		
To Fire insurance	2000		
To Wages	8000		
To Gas, electricity, water	4000		
To Gross profit	**35300**		
Total	**247000**	**Total**	**247000**

Profit and loss account

It is an important account that reveals the net result of the business in the form of net profit or net loss. All revenue receipts are received regularly out of day to day activities of the business. Revenue payments that are incurred are recorded in profit and loss account. The capital receipts and capital payments are not considered while preparing profit and loss account as they do not form a part of this account.

The format of a profit and loss account is given below:

Dr Profit and Loss Account for the year ending --- Cr

Particulars	Rs.	Particulars	Rs.
To Trading account (GL)		By Trading account (GP)	
To Salaries + Outstanding –Prepaid salaries as per adjustments		By Interest earned + Accrued interest as per adjustments	
To Rent of the premises		By Commission earned	
To Travelling expenses		By Discount earned	

To Rates and Taxes		By Rent received	
To Printing and stationery		By Bad debts recovered	
To Postage and Telegram		By Interest on drawings	
To Telephone charges		By Reserve for discount on Creditors	
To Insurance – Prepaid amount as per adjustment		By Dividends received	
To Interest paid		By Royalty Received	
To Discount allowed		By Capital Account(Net Loss)	
To Sundry expenses			
To Advertisement			
To Commission			
To Carriage outwards			
To Bad Debts			
To Reserve for bad debts			
To Reserve for discount on Debtors			
To Depreciation			
To Legal charges			
To Audit fee			
To Interest on Capital			
To Capital Account (Net Profit)			

6.2.2 Balance sheet

Balance sheet is a financial statement that shows the financial position (i.e., the assets, liabilities, and capital) of the business as on a particular date. Normally the balance sheet is drawn on the last day of the year (the closing date). The assets and liabilities may be presented in the balance sheet in any one of the following orders.

- Order of permanency
- Order of liquidity

Under the order of permanency, the assets are presented starting from the most permanent asset (fixed assets) to the least permanent asset (current assets). Similarly, the liabilities are presented starting from the most permanent liability (capital) to the least permanent liability (current liabilities).

The order of liquidity is the opposite of the order of permanency. The assets are presented starting from the least permanent asset (current assets) to the most permanent asset (fixed assets). Similarly, the liabilities are presented starting from the least permanent liability (current liabilities) to the most permanent liability (capital).

Sole proprietary organisations and partnership firms may use any of the above methods. However the joint stock companies have to use only the order of permanency for reporting purposes.

The format of a balance sheet as per the order of permanency is given below.

Balance Sheet as on ……..

Liabilities	**Rs.**	**Assets**	**Rs.**
Capital		Fixed Assets	
Opening balance		Land	
+net profit		Buildings	
(-net loss)		Plant and machinery	
+interest on capital		Furniture and fixtures	
- Drawings		Vehicles	
- Interest on drawings		Current assets	
Closing balance		Stock	
Long term liabilities		Sundry debtors	
Current liabilities		B/R	
Sundry creditors		Cash at bank	
B/P		Cash in hand	
Outstanding expenses		Prepaid expenses	
Incomes received in advance		Accrued incomes	
Total		Total	

6.3 Adjustments

Certain transactions may occur after ledger accounts have been closed and trial balance has been drafted. However, such transactions must be provided before preparing the final accounts if they belong to the current year. Such entries are called adjustments.

6.3.1 Outstanding expenses

Expenses yet to be paid or outstanding expenses for the current period should be charged against the income of the current period.

6.3.2 Prepaid expenses

Expenses paid in advance or prepaid expenses should be not be charged against the revenues related to the current period but it must be taken to the coming period.

6.3.3 Income received in advance

Income received in advance that does not belong to the current period should not be considered.

6.3.4 Accrued income

Accrued income is also called outstanding income. Income yet to be received for the current period should be considered as income for the current period irrespective of whether it is actually received in cash or not.

Self Assessment Questions

1. Expenses due but not yet paid are known as ______.
2. Prepaid expenses appear on the asset side of the balance sheet. (True/False)
3. Income earned but not received is called ____________.

6.3.5 Depreciation

Depreciation is a reduction in the value of an asset.

The reasons could be wear and tear, permanent fall of market price of the asset, or outdated technology. Depreciation must be treated as a cost. Therefore, the amount of depreciation must be deducted from the asset and debited to the profit and loss account.

6.3.6 Bad debts

Bad debts are those debts which are not recovered. Bad debts form loss to the business. The amount of bad debts must be deducted from the debtors and debited to the profit and loss account.

6.3.7 Provision for doubtful debts

From the past experience of the business proprietor, what percentage of debts may become bad in the future can be estimated. In the current year,

an equal amount of profit is set aside. This provision is also known as Reserve for Bad Debts (RBD) or Provision for Doubtful Debts or Reserve for Doubtful Debts. Since the provision for bad debts is a charge against profit it must be debited to the profit and loss account.

The amount to be charged against profits in P&L a/c is:

B+B + N – O

- First B stands for bad debts
- Second B stands for further bad debts
- N stands for new provision
- O stands for old reserve

Illustration 2:

On 1st January, 2006, the RBD account stood at Rs.9000 in the books of a merchant. The bad debts written off during the year ended 31st December, 2006, amounted to Rs.4800 and Sundry Debtors stood at Rs.480000. It was desired to maintain the reserve for bad debts at 5% on Debtors. During the year 2007, bad debts written off amounted to Rs.12000 and Sundry Debtors on 31st December 2007 amounted to Rs.380000. As usual 5% reserve was required. Show the adjustment in the profit and loss account.

Solution:

Profit and Loss Account for the Year 2006

Bad debts	4800			
+New reserve	24000			
(5%of 480000)				
-Old reserve	(9000)	19800		

Additional reserve required to be provided in P&L a/c in 2006 is Rs.19800

Profit and Loss Account for the Year 2007

Bad debts	12000			
+New reserve	19000			
(5%of 380000)				
-Old reserve	(24000)	7000		

Self Assessment Questions

4. Given: old RBD = 4000, new RBD required = 7000, then the amount of additional reserve to be created is Rs. _____________.
   a. 4000
   b. 7000
   c. 3000
5. Given: old RBD = 4000, additional RBD required = 7000, then the amount of additional reserve to be created is Rs._____________.
   a. 4000
   b. 7000
   c. 3000
6. Given: old RBD = 4000, Sundry Debtors 50000, new RBD required = 10% on Sundry Debtors, then the amount of additional reserve to be created is Rs._____________.
   a. 4000
   b. 5000
   c. 1000
7. Given: old RBD = 4000, Sundry Debtors 50000, further bad debts = 1000, new RBD required = 10% on Sundry Debtors, then the amount of additional reserve to be created is Rs._____________.
   a. 4900
   b. 900
   c. 3900

6.3.8 Reserves for discount on debtors

It is an amount set aside for giving discount to debtors. It is created by debiting the profit and loss account.

The following guidelines must be considered while dealing with the reserve for discount on debtors.

Illustration 3: The following items are found in the trial balance of M/s Sharada Enterprise on 31st December, 2000.

Sundry Debtors	Rs.160000
Bad Debts written off	Rs 9000
Discount allowed to Debtors	Rs. 1800
Reserve for Bad and doubtful Debts 31-12-1999	Rs. 16500
Reserve for discount on Debtors 31-12-1999	Rs. 3200

You are required to provide the bad and doubtful debts at 5% and for discount on debtors at 2%. Show the adjustments for bad debts, bad debts reserve, discount account, and provision for discount on debtors.

Solution:

The amount debited to P&L account towards RBD is computed as follows:

Old RBD	=	Rs.	16500
(-) Bad debts	=	Rs.	9000
Balance	=	Rs.	7500
New RBD @5% on160000	=	Rs.	8000
RBD to be provided	=	Rs.	500 (8000-7500)

The amount debited to P&L account towards Reserve for Discount on Debtors is computed as follows:

Good Debtors	=	Rs.160000 – Rs.8000 (New RBD)= Rs.152000
Old Reserve for Discount on Drs	=	Rs.3200
Less Discount on Drs	=	Rs.1800
Balance Reserve	=	Rs.1400
New Reserve for Discount at 2% On good Drs 152000	=	Rs.3040
Reserve for Discount to be provided now	=	Rs.1640 (3040 -1400)

In the balance sheet, the Sundry debtors are reduced by bad debts shown out side the trial balance, the new RBD, discount on debtors shown out side the trial balance and the new Reserve for discount on debtors.

6.3.9 Reserves for discount on creditors

Discount on creditors is an amount of discount expected to be received from creditors. It is a gain. Discount on creditors may be credited to P/L a/c only if it is a regular practice to receive it and it is very certain that it will be received.

6.3.10 Closing stock

Stock of goods – raw materials, semi finished goods, finished goods – at the end of the accounting year is called closing stock. It should be credited to the trading account. In the balance sheet, it appears as an asset.

Self Assessment Questions

8. Given: old RBD = 4000, sundry debtors = 50000, further bad debts = 1000, new RBD required = 10% on sundry debtors, and reserve for discount on debtors required is at 5%. The amount of reserve for discount on debtors to be created is Rs. _____________.
   a. 2205
   b. 2500
   c. 250

Activity 1:

Find out the missing figures.

	Office stationery	Consumables
Opening stock	5000	8000
Purchased during the year	25000	?
Closing stock	3000	6000
Consumed for the year	?	24000

Answer to Activity 1:

- Office stationery consumed for the year (5000+25000-3000)=27000
- Consumables purchased during the year (24000+6000-8000) =22000

6.4 Adjusted Trial Balance

The adjustments may be directly incorporated into the final accounts as shown above. However, the adjustments may also be incorporated into the trial balance so that the preparation of the final accounts becomes easy. Such a trial balance, which is prepared after incorporating all the adjustments, is called adjusted trial balance.

Such adjustments are done through the concerned ledger accounts.

We may understand this with the help of an illustration.

Illustration 4: From the given trial balance draft an Adjusted Trial Balance.

Trial Balance as on 31.03.2011

Debit balances	**Rs.**	**Credit balances**	**Rs.**
Furniture and Fittings	10000	Bank Over Draft	16000
Buildings	500000	Capital Account	400000
Sales Returns	1000	Purchase Returns	4000
Bad Debts	2000	Sundry Creditors	30000
Sundry Debtors	25000	Commission	5000
Purchases	90000	Sales	235000
Advertising	20000		
Cash	10000		
Taxes and Insurance	5000		
General Expenses	7000		
Salaries	20000		
TOTAL	690000	TOTAL	690000

Adjustments:
1. Charge depreciation at 10% on Buildings and Furniture and fittings.
2. Write off further bad debts 1000
3. Taxes and Insurance prepaid 2000
4. Outstanding salaries 5000
5. Commission received in advance1000

Solution:

Ledger accounts

Furniture and fittings a/c

Dr. Cr.

Particulars	**Rs.**	**Particulars**	**Rs.**
To bal b/d	10000	By Depreciation By bal c/d	1000 9000
Total	10000	Total	10000
To bal b/d	9000		

Buildings a/c

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
To bal b/d	500000	By Depreciation By bal c/d	50000 450000
Total	500000	Total	500000
To bal b/d	450000		

Bad Debts a/c

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
To bal b/d To Sundry Debtors	2000 1000	By bal c/d	3000
Total	3000	Total	3000
To bal b/d	3000		

Sundry Debtors a/c

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
To bal b/d To bal c/d	25000	By Bad Debts By bal c/d	1000 24000
Total	25000	Total	25000
To bal b/d	24000		

Taxes and Insurance a/c

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
To bal b/d To bal c/d	5000	By Prepaid taxes and Insurance By bal c/d	2000 3000
Total	5000	Total	5000
To bal b/d	3000		

Prepaid taxes and Insurance a/c

Dr. Cr.

Particulars	**Rs.**	**Particulars**	**Rs.**
To Taxes and Insurance	2000	By bal c/d	2000
Total	2000	Total	2000
To bal b/d	2000		

Salaries a/c

Dr. Cr.

Particulars	**Rs.**	**Particulars**	**Rs.**
To bal b/d To Outstanding Salaries	20000 5000	By bal c/d	25000
Total	25000	Total	25000
To bal b/d	25000		

Outstanding Salaries a/c

Dr. Cr.

Particulars	**Rs.**	**Particulars**	**Rs.**
To bal c/d	5000	By Salaries	5000
Total	5000	Total	5000
		By bal b/d	5000

Depreciation a/c

Dr. Cr.

Particulars	**Rs.**	**Particulars**	**Rs.**
To Furniture and fittings To Buildings	1000 50000	 By bal c/d	 51000
Total	51000	Total	51000
To bal b/d	51000		

Commission a/c

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
To Commission received in advance To bal c/d	1000 4000	By bal b/d	5000
Total	5000	Total	5000
		By bal b/d	4000

Commission received in advance a/c

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
 To bal c/d	 1000	By Commission By	1000
Total	1000	Total	1000
To bal b/d		By bal b/d	1000

Adjusted Trial Balance as on 31.03.2011

Debit balances	Rs.	Adjustments	Adjusted amount
Furniture and Fittings	10000	-1000	9000
Buildings	500000	-50000	450000
Sales Returns	1000		1000
Bad Debts	2000	+1000	3000
Sundry Debtors	25000	-1000	24000
Purchases	90000		90000
Advertising	20000		20000
Cash	10000		10000
Taxes and Insurance	5000	-2000	3000
General Expenses	7000		7000
Salaries	20000	+5000	25000
Depreciation	-	1000+50000	51000
Prepaid Taxes and Insurance	-	2000	2000
TOTAL	690000		695000

Credit balances	Rs.		
Bank Over Draft	16000		16000
Capital Account	400000		400000
Purchase Returns	4000		4000
Sundry Creditors	30000		30000
Commission	5000	-1000	4000
Sales	235000		235000
Outstanding salaries	-	5000	5000
Commission received in advance	-	1000	1000
TOTAL	690000		695000

Self Assessment Questions

9. Given: salaries paid during 01.4.2010 and 31.03.2011 is Rs.60000
   Prepaid salaries as on 01.4.2010 is Rs. 5000
   Prepaid salaries as on 01.4.2010 and 31.03.2011 is Rs.20000
   The amount of salary to be debited to the P/L for the year 2010-11 is
   a. Rs. 60000
   b. Rs. 55000
   c. Rs. 80000
   d. Rs. 45000

6.5 Final Accounts of Joint Stock Companies

Section 211 requires that every balance sheet of a company should provide a true and fair view of the state of affairs of a company at the end of the financial year. The balance sheet should be set out in the form prescribed in Part 1 of Schedule VI of the Companies Act 1956.

Vertical Form of Balance Sheet

	Schedule No.	Figures as at the end of current financial year	Figures as at the end of previous financial year
I. **Sources of Funds:**			
(1) **Shareholders funds**			
a) Capital			
b) Reserves and Surplus			
(2) **Loan funds**			
a) Secured loans			
b) Unsecured loans			
TOTAL :			
II. **Applications of Funds:**			
(1) **Fixed assets**			
a) Gross block			
b) Less depreciation			
c) Net block			
d) Capital work-in-progress			
(2) **Investments**			
(3) **Current assets, loans, and advances**:			
a) Inventories			
b) Sundry debtors			
c) Cash and bank balances			
d) Other current assets			
e) Loans and advances			
Less : current liabilities and provisions:			
a) Liabilities			
b) Provisions			
c) Current assets			
(4) a) **Miscellaneous expenditure** to the extent not written off or adjusted			
b) **Profit and Loss account**			
TOTAL :			

Activity 2:
Pick out a balance sheet of a manufacturing company and list out the various types of capital, assets, and liabilities.

Hint : Visit website of any company and download balance sheet –list out the following-
Authorised, Issued, subscribed, called-up and paid-up capital.
Fixed assed , Current asset
Longterm and Current-liabilities

Illustration 5: From the following trial balance of Anjana Machineries Limited and the additional information, prepare the final accounts of the company as per Schedule VI of the Companies Act.

Trial Balance as on 31st March, 2008

Particular	Amount	Particular	Amount
Opening stock- Raw materials	1,50,000	Sales	47,50,000
- Work-in-process	28,000	General reserve	25,000
- Finished goods	1,90,000	Provision for dep on P&M	1,40,000
Purchases	15,50,000	Sundry creditors	1,35,000
Salaries and wages	2,30,000	Provision for dep on furniture	30,000
Plant and machinery (at cost)	12,20,000	Purchases returns	25,000
Investment at cost (short term)	3,29,000	Eq share capital (Rs.100 each)	30,00,000
Sundry debtors	1,58,000	10% Pref Sh.Cap (Rs.100/each)	5,00,000
Cash at bank	2,50,900	9% Debentures	6,00,000
Directors remuneration	80,000	Deb Redemption Reserve	3,00,000
Interim dividend	1,20,000	Bills payable	90,000
Office furniture (at cost)	1,80,000	Securities premium	2,80,000
Rates and taxes	17,000	Income from investments	30,000
Insurance	15,000	Excise duty payable	15,000
Audit fee	30,000	Profit and loss	20,000
Sales return	70,000		
Excise duty on finished goods	3,20,000		
Rent	90,000		

Rent prepaid	20,000		
Bad debts	18,000		
Interest on debentures	27,000		
Freehold premises	47,30,000		
Other expenses	37,100		
Bills receivable	30,000		
Preliminary expenses	50,000		
Total	**99,40,000**	**Total**	**99,40,000**

Additional information:

1. Stock as on 31st March, 2008
2. Raw materials and stores Rs.1,45,000; work-in-process, Rs.22,000; Finished goods, Rs.1,98,000.
3. Provide depreciation on written down value basis on plant and machinery @ 20% per annum and on furniture @ 15% per annum and on freehold premises @ 5% per annum.
4. In the middle of the year, a machine costing Rs.3,00,000 was purchased and duly recorded.
5. Sundry debtors include Rs.18,000 due for more than six months. Provide for bad and doubtful debts @ 5% on debtors.
6. Market value of investments is Rs.3,19,000.
7. Make a provision for income-tax @ 35%.
8. Corporate dividend tax is 14.025% including surcharge of 10% and education cess of 2%.
9. The Board of Directors has recommended a final dividend @ 15% on equity shares.
10. Transfer of Rs.1,00,000 to debenture redemption reserve.
11. Transfer of minimum amount to statutory reserve as required by company law.
12. Provision for depreciation on freehold premises as on 31/03/2007 was Rs.12,70,000.
13. Written of one-fifth of preliminary expenses.
14. Interest on debentures becomes due on 31st October and 31st March.

Solution:

Profit and Loss Account for the year ended 31st March, 2008

Particular	Rs.	Amount	Particular	Rs.	Amount
To opening stock			By sales	47,50,000	
Work-in-process	28,000		(-) excise duty	3,20,000	
Finished goods	1,90,000	2,18,000	(-)sales return	70,000	43,60,000
To raw material consumed					
Opening stock of RM	1,50,000		By income from invt		30,000
Add purchases	15,50,000				
(-) purchase returns	25,000		By cl.stock	1,98,000	
(-) closing stock of RM	1,45,000	15,30,000	Finished goods	22,000	2,20,000
			Work-in-process		
To Salaries and wages		2,30,000			
To Director's remun		80,000			
To Rates and taxes		17,000			
To Insurance		15,000			
To Audit fees		30,000			
To Rent		90,000			
To Bad debts		18,000			
To Prov for bad debt		7,900			
To Interest on debenture	27,000				
(+) interest due	27,000	54,000			
To depreciation on					
Plant and Machinery 20%	2,14,000				
Office furniture 15%	22,500				
Freehold premises 5%	2,36,500	4,73,000			
To Other expenses		37,100			
To Loss on investment		10,000			
To Pre expenses written off		10,000			
To Provision for income tax		6,26,500			
To Net profit		11,63,500			
		46,10,000			46,10,000

Profit and Loss Appropriation Account

Particular		Amount	Particular		Amount
To interim divided		1,20,000	By Balance b/d		20,000
To Prop dividend – equity	4,50,000		By Net profit (transfer from profit and loss)		11,63,500
- Preference	50,000	5,00,000			
To corporate dividend tax payable (50, 000 x 14.025%)		16,830			
To Provision for Corp Div Tax (14.025% of Rs.5,00,000)		70,125			
		1,00,000			
To Debenture redemption reserve		58,175			
To General reserve (5% of Rs.11,63,500)		3,18,370			
To Balance c/d					
		11,83,500			11,83,500

Balance Sheet of Anjana Machineries as on 31st March, 2008

Particular		Amount	Particular		Amount
Share capital		–	**Fixed Assets:**	60,00,000	
Authorised capital			Freehold premises	15,06,500	44,93,500
Issued and subscribed capital			(-) Prov for Dep		
			P and M cost	9,20,000	
30,000 Equity shares of Rs.100 each fully paid up		30,00,000	(+) purchased	3,00,000	
			(-) Prov for Depr (1,40,000 + 2,14,000)	(3,54,000)	
5000 10% Pref shares of Rs. 100 each fully paid		5,00,000			8,66,000
Reserves and Surplus			Furniture- cost	1,80,000	
Securities premium		2,80,000	(-) Prov for Dep		
Debentures Red res	3,00,000		30,000 +22,500	52,500	1,27,500
(+) transfer from P&L a/c	1,00,000	4,00,000			
			Investments at market value		3,19,000
General reserve	25,000		**C.A, Loans and Advances:**		
(+) statutory transfer	58,175	83,175			
Profit and loss		3,18,370	**C. Assets**		
Secured Loans:			**Stock**		
9% Debentures		6,00,000	Raw material	1,45,000	
Interest on debentures		27,000	Work-in-process	22,000	
			Finished goods	1,98,000	3,65,000

Unsecured Loans:			**Debtors**		
Cur Lia and provisions			(-) Prov for bad debts	1,58,000	
current liabilities			Debts due more than		
Bills payable		90,000	6 months	(7,900)	1,50,100
Sundry creditors		1,35,000	Other debts		
Excise duty payable		15,000	**Cash at bank**	18,000	
Corp div tax payable		16,830	**Loans and Adv**	1,40,000	2,50,900
			Bills receivable	30,000	
Provisions:		70,125	Prepaid rent	20,000	50,000
Provision for corporate		6,26,500			
dividend tax	4,50,000		**Misc Exps**	50,000	
Provision for tax	50,000	5,00,000	Pre expenses	10,000	40,000
Prop div on Eq capital			(-) written off		
Prop div on pref capital					
		66,62,000			66,62,000

6.6 Summary

Let us recapitulate the important concepts discussed in this unit:

- The final accounts has two components. They are profit and loss account and balance sheet.
- They must be prepared on accrual basis. So adjustments must be incorporated in the final accounts.
- Balance sheet of a joint stock company must be prepared in accordance with Part 1 of Schedule VI of the Companies Act 1956.

6.7 Glossary

Adjusted trial balance*:* Trial balance redrafted after incorporating all the adjustments.

Bad debts: An irrecoverable debt.

Depreciation: Fall in the value of a fixed asset.

Provision (Reserve) for Doubtful Debts: Reserve created for meeting expected bad debts.

Reserve for discount on creditors**:** Discount expected to be allowed by creditors.

Reserve for discount on debtors: Reserve created for allowing discount to debtors.

6.8 Terminal Questions

1. The following trial balance is extracted from the books of a merchant on 31-12-2004.

Furniture and Fittings	640	Bank Over Draft	2850
Motor Vehicles	6250	Sales Returns	200
Buildings	7500	Purchase Returns	125
Capital Account	12500	Advertising	450
Bad Debts	125	Interest on Bank Over Draft	118
Provision for Bad Debts	200	Commission	375
Sundry Debtors	3800	Cash	650
Sundry Creditors	2500	Taxes and Insurance	1250
Stock on 1-1-2004	3460	General Expenses	782
Purchases	5475	Salaries	3300
Sales	15450		

The following adjustments are to be made.

1. Stock in hand on 31-12-2004 was Rs.3250.
2. Depreciate buildings at the rate of 5%, furniture and fittings @ 10% and motor vehicles @ 20%.
3. Rs.85 is due for interest on bank overdraft.
4. Salaries of Rs.300 and taxes Rs.120 are outstanding.
5. Insurance amounting to Rs.100 is prepaid.
6. One-third of the commission received is with respect to the work to be done next year.
7. Written off a further sum of Rs.100 as bad debts and provision for bad and doubtful debts to be made equal to 10% on sundry debtors.

Prepare trading account and profit and loss account.

6.9 Answers

Self Assessment Questions

1. Outstanding expenses
2. True
3. Accrued income

4. C
5. B
6. C
7. B
8. A
9. d

Terminal Questions

1. Gross Profit Rs.9690, Net Profit Rs.1551.

6.10 Case Study

Adjustment Entries

RD International Ltd. provides local mail delivery service in the financial district of Bangalore. The trial balance of the company is as follows:

RD International Ltd.
Trial Balance, 28th February, 2011

Account	Debit Rs.	Credit Rs.
Office Equipment	7,000	
Accumulated Depreciation, Office Equipment		1,000
Office Supplies	3,800	
Debtors	1,900	
Cash	770	
Prepaid Rent	2,400	
Creditors		1,100
Unearned Revenue		400
Share Capital		10,000
Retained Earnings		2,100
Dividends	1,400	
Revenue from Services		7,200
Salaries Expense	3,800	
Telephone Expense	730	
Total	**21,800**	**21,800**

Additional information:

(a) Prepaid rent represents rent from February to April.

(b) The inventory of office supplies at the end of February was Rs. 3,200.

(c) Revenue earned for services preformed but not yet billed at the end of February was Rs.1,600.

(d) Revenue earned for service performed, paid for in advance, was Rs.210.

(e) Depreciation on office equipment for February was Rs. 250.

(f) Accrued salaries at the end of February were Rs. 540.

1. Prepare adjusting entries and post them directly to the T accounts.
2. Prepare an adjusted trial balance.
3. Prepare the profit and loss account, statement of retained earnings, and balance sheet.

Source: ***Narayanaswamy, R., Financial Accounting, A Managerial Perspective 3/e, PHI***

Answer to Case study

1. Preparing and posting adjusting entries to T accounts

Office Equipment

Balance	7,000		

Accumulated Depreciation, Office Equipment

		Balance	1,000
		[e]	250
		Balance	1,250

Office Supplies

Balance	3,800	(b)	600
Balance	3,200		

Debtors

Balance	1,900		

Cash

Balance	770		

Prepaid Rent

Balance	2,400	(a)	800
	1,600		

Unbilled Revenue

(c)	1,600		

Creditors

		Balance	1,100

Unearned Revenue

(d).	210	Balance	400
		Balance	190

Salaries Payable

		(f)	540

Share Capital

		Balance	10,000

Retained Earnings

		Balance	2,100

Dividends

Balance	1,400		

Revenue from Services

		Balance	7,200
		(c)	1,600
		(d)	210
		Balance	9,010

Salaries Expense

Balance	3,800		
(f)	540		
Balance	4,340		

Office Supplies Expense

(b)	600		

Telephone Expense

Balance	730		

Rent Expense

(a)	800		

Depreciation Expense

(e)	250		

2. Preparing adjusted trial balance

RD International Ltd.
Adjusted Trial Balance, 28th February, 2011

Account	Debit Rs.	Credit Rs.
Office equipment	7000	
Accumulated depreciation, office equipment		1250
Office supplies	3200	
Debtors	1900	
Cash	770	
Prepaid rent	1600	
Unbilled revenue	1600	
Creditors		1100
Unearned revenue		190
Salaries payable		540
Share capital		10000
Retained earnings		2100
Dividends	1400	
Revenue from services		9010
Salaries expense	4340	
Office supplies expense	600	
Telephone expense	730	
Rent expense	800	
Depreciation expense	250	
Total	24190	24190

Preparing Financial Statements
RD International Ltd.
Profit and Loss for the month ended 28th February, 2011

Particulars	**Rs.**	**Rs.**
Revenues		9010
Revenue from services		
Expenses		
Salaries expense	4340	
Office supplies expense	600	
Telephone expense	730	
Rent expense	800	
Depreciation	250	6720
Net Profit		2290

RD International Ltd.
Statement of Retained Earnings for the month ended 28th February, 2011

Revenues	**Rs.**	**Rs.**
Opening balance 1st February, 2011	*2100*	
+ Net Profit	2290	
Profits available for distribution		4340
Less: Dividends		1400
Retained Earnings February 28, 2011		

RD International Ltd
Balance Sheet as on 28th February, 2011

Particulars	**Rs.**	**Rs.**
Assets		
Office equipment	7000	
Less: Accumulated depreciation	1250	5750
Office Supplies		3200
Debtors		1900
Cash		770
Prepaid rent		1600
Unbilled revenue		1600
Total Assets		14820
Liabilities		
Creditors		
Unearned revenue		
Salaries payable		
Total Liabilities		1830
Share capital	10000	
Retained earnings	2990	
Equity		12990
Total liabilities+ Equity		14820

References:

- Narayanaswamy R., *Financial Accounting, A Managerial Perspective 3/e*, PHI
- Jain S. P., & Narang K. L., *Financial Accounting*, Kalyani Publishers

E-Reference:

- www.phindia.com/narayanaswamy – retrieved on December-23rd 2012

Unit 7 Introduction to Management Accounting

Structure:

7.1 Introduction
Objectives
7.2 Meaning of Management Accounting
7.3 Roles of Management Accounting
7.4 The Decision Making Process
7.5 Management Accounting Framework
7.6 Functions of Management Accounting
7.7 Distinction Between Management Accounting and Financial Accounting
7.8 Tools of Management Accounting
Traditional tools
Balanced scorecard
Cost management system
Value added
7.9 Merits of Management Accounting
7.10 Limitations of Management Accounting
7.11 Responsibilities of a Management Accountant
7.12 Summary
7.13 Glossary
7.14 Terminal Questions
7.15 Answers
7.16 Case Study

7.1 Introduction

In the previous unit we have learnt the components of financial accounts and the adjustments. We have also analysed the adjusted trial balance and final accounts of joint stock companies. The financial statements serve the informational needs of the external users. The internal user, that is, the management is the planning and the decision making body of the organisation. It requires more detailed information, some times in advance. Such informational requirements of the management are not met by the financial accounts. In order to fill this gap, management accounting or accounting for management was developed. In this unit, we will learn more

about the functions of management accounting and the tools provided by the management accounting to assist the management in planning and decision-making.

Objectives:

After studying this unit, you should be able to:

- explain the meaning of management accounting
- analyse the strategic roles of management accounting
- compare management accounting and financial accounting
  analyse the decision making process in business organisations
- describe the functions of management accounting
- explain the traditional tools of management accounting

7.2 Meaning of Management Accounting

The American Accounting Association has defined management accounting as "the application of appropriate techniques and concepts in processing historical and projected economic data of an entity to assist management in establishing plans for reasonable economic objectives in the making of rational decisions with a view towards achieving these objectives."

7.3 Roles of Management Accounting

Management accounting helps the management in the following:

- It guides the management to fix most appropriate objectives for the company and also ensures that the objectives set at different levels are aligned.
- It helps in developing alternative courses of action.
- It provides data or information about the alternative courses of action.
- It provides tools to evaluate the alternative courses of action.
- It guides the management in implementing the best course of action.
- It provides tools for performance measurement.
- It provides information and tools for taking corrective action.

7.4 The Decision Making Process

The most important functions of management are decision making, planning, and controlling. The future of a company is a result of the

decisions taken today by the management. A wrong decision may take the company to a dead end. Hence, being cautious is of utmost importance before taking a decision. Two things in this context are:

- Adopting a systematic methodology or process for taking decisions.
- Obtaining full information relevant and required for the decision.

In this section, we will look at these two aspects of decision making and also see how management accounting helps to achieve this. The quantity, quality, relevance, dependability, and timeliness of the information produced and provided by the management accounting are of vital importance to the management in taking correct decisions. Therefore, understanding the decision making process is a *necessary precedent* to understanding management accounting.

Figure 7.1 depicts the widely accepted model of decision making, planning, and control process.

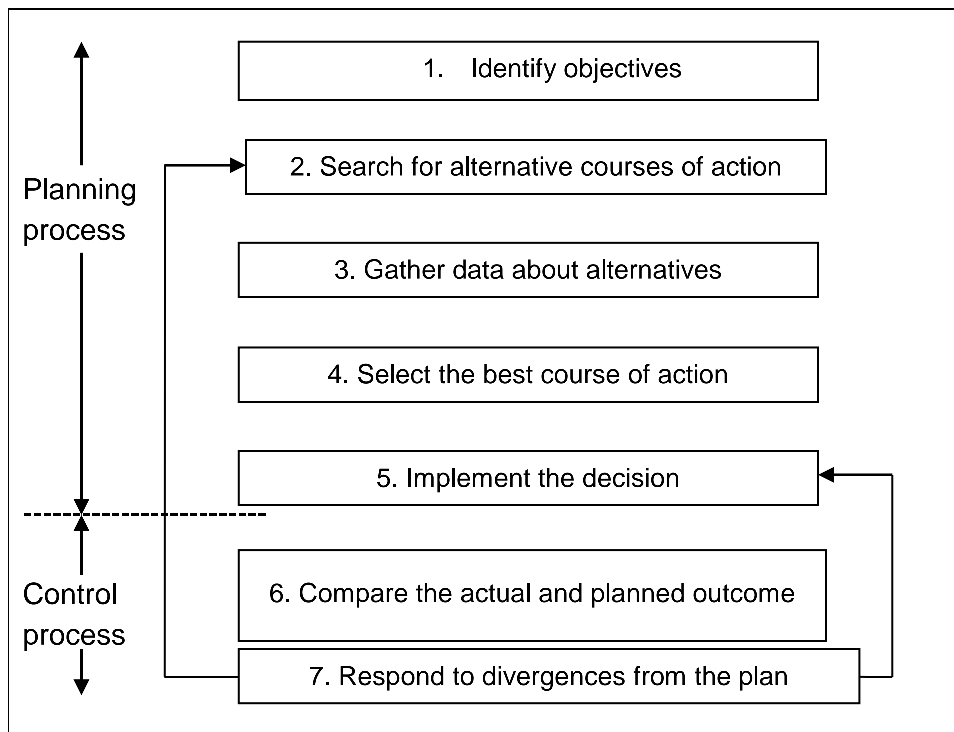


Figure 7.1: Steps in Decision Making, Planning and Control Process (Source: Management and Cost Accounting 6/e, Colin Drury)

Let us now discuss the steps in detail.

1. Identify objectives:

The objectives are the starting point. They provide direction to decisions and actions. The objectives have to be set at all levels, that is, strategic level, tactical level, and operational level. For example, at the strategic level, the objective can be 'maximisation of shareholder value'. At the tactical level, the objective can be 'to increase turnover by 10%'. At the operational level, the objective can be "to reduce cost by 15%'. Irrespective of the level, the process remains the same. Before proceeding, one has to be clear about the objectives.

2. Search for alternative courses of action

The second stage in the decision making process is the range of alternative courses of action (or strategies) that are relevant to the objective on hand. It is better to list out all possible courses of action so that the best alternative can be finally selected.

As an example, the possible alternative strategies for the above mentioned objectives are given below.

Objective: 'maximisation of shareholder value'

Alternative strategies:

- Expansion in the form of new investment
- Expansion by taking over
- Diversification
- Capitalisation on brand image

Objective: 'increase turnover by 10%'

Alternative strategies:

- Increase selling price
- Aggressive selling in the existing territories
- Capture new territories
- Improve quality

Objective: 'reduce cost by 15%'

Alternative strategies:

- Reduce wastage
- Buy inputs at lower prices
- Use inferior quality inputs
- Change composition

3. Gather data about alternatives

Having developed the alternative, the next step is to collect all the data or information about them. It must be ensured that the complete information about all alternatives is obtained before proceeding with their evaluation. Facts and figures based on scientific forecasts must be obtained. Prejudices, biases, opinions, etc. must be avoided. Accurate figures about variables like costs, prices, quantity to be consumed, etc. must be calculated.

4. Select the best course of action

The data gathered must be put in a useful form so that sensible analysis and interpretation can be done. In order to do a proper financial evaluation of the alternatives, management accounting provides tools such as marginal costing, incremental analysis, budgetary control, etc. Using an appropriate tool, the different course of actions may be compared and the best one may be finalised.

5. Implement the decision

The next step is to implement the course of action that was finalised. It basically involves commitment of resources to the decision taken for a known or unknown period of time in the future.

6. Compare the actual and planned outcome

The actual outcome (sales, production, quality, performance, cost, etc.) must be compared with the planned outcome. The reasons for the divergences must also be analysed.

7. Respond to divergences from the plan

The reasons for analysing the divergences are to enable the management to take corrective actions.

While steps 1 to 5 relate to the planning process, steps 6 and 7 relate to the controlling process.

7.5 Management Accounting Framework

For offering accounting and financial advice as well as for capitalising the available opportunities for future development, it is necessary for an effective framework to be designed. The management accountant must organise the whole accounting division. There must be a prompt and

immediate recording of the entire information flow into the department from the functional and service departments. The framework must concentrate on the following:

- Getting rid of routine work
- Reporting actual and planned performance
- Fixing organisational responsibilities
- Applying modern and modified practices of analysing and interpreting results
- Designing a sound and an efficient organisation taking into account the nature and size of the business unit

7.6 Functions of Management Accounting

The following are the important functions of management accounting.

- ***Forecasting and planning* –** Management accounting helps in short-term and long-term forecasts of profit, capital investment and financing, sales, demand, and costs.
- ***Controlling performance* –** Management accounting is very helpful in controlling the financial performance of an organisation. It compares actual performance with operating plans and standards. It also reports and interprets the results of operations to all the levels of management.
- ***Coordination* –** Management accountant consults various departments and is responsible for policy decisions. Co-ordination increases the efficiency of an organisation.
- ***Other functions* –** Management accounting serves in a number of other ways. It supplies useful information to different functional authorities. It provides accounting information and advice for price determination and pricing decisions. It also helps in making certain strategic decisions, decisions regarding seasonal or temporary suspension of production, make or buy decisions, replacement decisions, etc.

7.7 Distinction Between Management Accounting and Financial Accounting

Financial accounting is the preparation and communication of financial information to outsiders such as creditors, bankers, government, customers, etc. Another objective of financial accounting is to give complete picture of

the enterprise to shareholders. Management accounting on the other hand, aims at preparing and reporting the financial data to the management on regular basis. Management is entrusted with the responsibility of taking appropriate decisions, planning, performance evaluation, control, management of costs, cost determination, etc. For both financial accounting and management accounting the financial data are the same. The reports prepared in financial accounting are also used in management accounting. But there are a few major differences between financial accounting and management accounting. Table 7.1 depicts the differences.

Table 7.1: Differences Between Financial Accounting and Management Accounting

Dimension	Financial accounting	Management accounting
Users	The primary users of financial accounting information are external users like shareholders, creditors, government authorities, employees, etc.	The primary users of management accounting are internal users like top, middle, and lower level managers.
Purpose	Reporting financial performance and financial position to enable the users to take financial decisions.	To help the management in planning, decision making, monitoring, and controlling.
Need	It is a statutory requirement. What to report, how to report, how much to report, when to report, in which form to report, etc. are stipulated by Law or Standards.	It is optional. What to report, how to report, how much to report, when to report, in which form to report, etc. are decided by the management as per the needs of the company or management.
Expression of information	Accounting information is always expressed in terms of money.	Management accounting may adopt any measurement unit like labour hours, machine hours, or product units for the purpose of analysis.
Reporting timing and frequency	Financial data is presented for a definite period, say one year or a quarter.	Reports are prepared on a continuous basis, monthly, weekly, or even daily.
Time perspective	Financial accounting focuses on historical data.	Management accounting is oriented towards the future.

Sources of principles	Financial accounting is a discipline by itself and has its own principles, policies and conventions (GAAP).	Management accounting makes use of other disciplines like economics, management, information system, operation research, etc.
Reporting entity	Overall organisation	Responsibility centres within the organisation
Form of reports	Income statement (Profit and Loss a/c) Balance sheet Cash flow statement	MIS reports Performance reports Control reports Cost statements Variance statements Budgets Estimate statements Flowcharts

7.8 Tools of Management Accounting

Management accounting provides several tools or techniques to the management for managing its functions, particularly planning and controlling.

7.8.1 Traditional tools

The following are the traditional tools of management accounting.

- ***Ratio analysis* –** It helps the management in keeping track of the expenses, profitability, solvency position, etc.
- ***Funds flow analysis* –** It helps in critical evaluation of the changes in working capital.
- ***Cash flow analysis* –** It helps in critical evaluation of the changes in the cash.
- ***Marginal costing* –** It is a technique of differentiating between product costs and period costs and allocating only variable costs to the products.
- ***Budgetary control* –** It involves preparation of budgets in advance for the purpose of controlling costs.
- ***Standard costing* –** It is a technique of controlling costs. It imposes pre-determined costs for production of goods and services and insists on adherence to such pre-determined costs.
- ***Responsibility accounting* –** It is a system under which costs are accumulated and reported at each level of responsibility. The accounting

and cost data may be used by the management at each level for controlling the operations and their costs.

- ***Activity based costing –*** It is a system in which costs are first identified with activities and then with products.

We will be discussing responsibility accounting and activity based costing in detail in the subsequent units.

7.8.2 Balanced scorecard

The balanced scorecard is a contemporary performance measurement system for an organisation. Traditionally, a company's performance was measured only by using certain financial ratios like Return on Investment (ROI), Net Profit Ratio, Earning Per Share (EPS), working capital turnover, etc.

However, a company's performance or success cannot be completely measured from a single view point (perspective). No doubt, financial performance is an important aspect, but certain other aspects are also important. Financial performance includes customer satisfaction, efficiency of internal systems, opportunity for learning in the organisation, corporate governance, etc. Hence, a performance measurement system should be holistic and should provide for evaluation of the company based on all these perspectives.

One such holistic performance measurement system was developed by Dr. Robert Kaplan and Dr. David Norton. They called it the balanced scorecard.

It is a framework for integrating measures derived from strategy. While retaining financial measures of past performance, the balanced scorecard introduces the drivers of future financial performance as shown in figure 7.2. The drivers (customer, internal business process, learning, and growth perspectives) are derived from the organisation's strategy translated into objectives and measures.

Figure 7.2 depicts a balanced scorecard showing perspectives as developed by Dr. Robert Kaplan and Dr. David Norton.

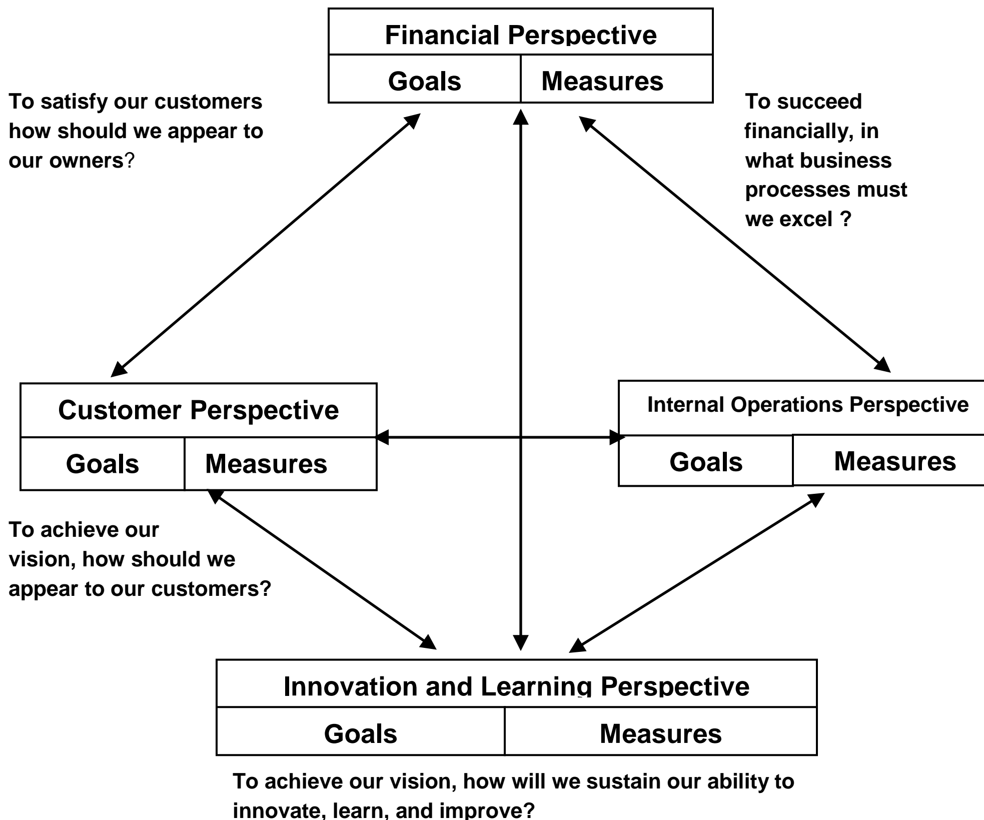


Figure 7.2: Balanced Scorecard as Developed by Dr. Robert Kaplan and Dr. David Norton

For each of the above perspectives, a company must have its own stated objectives (goals) and specifically defined units of measurements for each such objective.

An example of RD International Ltd. is shown below.

RD International Ltd.
Balanced Scorecard

Perspectives	Objectives (goals)	Measurements
Financial	Achieve 20% return on equity	Return on Equity (ROE)
	Achieve 100% growth rate in sales	Rate of growth in sales
	Achieve 25% profit on sales	Net profit margin
Customer	Adherence to quality	Rejects made
	Customer satisfaction	Number of complaints received
	Customer loyalty	Number of customers coming back for the next time
Internal operations	Efficiency of MIS	Incidents of leakage of information
	Effectiveness of MIS	Timeliness of reports
	Cost of internal operations	Expenses ratios
	Co-ordination between different units	Incidents of complaints/ differences/ incompatibility etc. among different units.
Innovation and learning	Research and development activities	Number of inventions made Number of patent and copy rights owned by the company. Amount of investment made in R&D
	Training and development of employees	Number of employees reaching the next grade after the training

The balanced scorecard is more than a measurement system as it can be used as an organising framework for management processes. The real power of the balanced scorecard is when it is transformed from a measurement system to a management system. It fills the void that exists in most management systems – the lack of a systematic process to implement and obtain feedback about strategy.

In India, a few noted organisations have adopted the balanced scorecard successfully. The Commercial Vehicles Business Unit (CVBU) of Tata Motors was among the first Asian organisations to be inducted into the

prestigious Balanced Scorecard Hall of Fame, in recognition of its exemplary success with the model. The company is one of the world's top 10 truck manufacturers and the CVBU began deployment of balanced scorecard in 2000, in an attempt to remedy years of poor financial performance. The focus was on achieving a turnaround, and then progressing to sustainable growth. Within 2 years of implementation, the company began to show tangible improvement in performance including a 40% growth in revenue.

The implementation of the balanced scorecard has enabled them to focus on different elements of operational performance. Defining, cascading, and communicating strategies across the organisation have brought about transparency and alignment. The scorecard incorporates Safety, Quality, Delivery, Cost, and Morale (SQDCM) and Volume, Market Share, Customer Satisfaction, Dealer Satisfaction, and Receivables (VMCDR).

Activity:

List out the companies that implement balanced score card.

7.8.3 Cost Management System (CMS)

The explosion in technology coupled with increasing worldwide competition, is forcing managers to produce high quality goods and services in order to provide outstanding customer service and at the lowest possible cost.

Horngren and others define a CMS as “a collection of tools and techniques that identifies how management’s decisions affect costs”.

Many companies have moved away from a historical cost accounting perspective towards a proactive cost management perspective. A cost management system is a management planning and control system with the following objectives.

1. To provide cost information for strategic management decisions.
2. To provide cost information for operational control.
3. To provide a measure of inventory value and cost of goods sold for financial reporting.
4. To measure the cost of the resources consumed in performing the organisation’s significant activities.

5. To identify and eliminate non-value added costs. These are the costs of activities that can be eliminated with no deterioration of product quality, performance, or perceived value.
6. To determine the efficiency and effectiveness of all major activities performed in the organisation.
7. To identify and evaluate new activities that can improve the future performance of the organisation.

7.8.4 Value added

Instead of selling a piece of wood as it is, think of converting it into a chair and then selling it. Which one would fetch more money to you? Obviously, it is the chair. By converting the piece of wood into a chair you have added value to it. You have increased the realisable value of the wood. This is called the 'Value Added'. The value added can be quantified and used as a measure of performance. Considering this example, the wood could be sold for Rs.1000 but the chair made out of that wood could be sold for Rs.2,500, the value added is Rs.1,500 (i.e., Rs.2,500 - Rs.1000).

Hence, we may conclude that the value added is the increase in the realisable value by altering the form of a raw material by converting it into a finished product.

According to ICAI, the term value added refers to the increase in value of a product or service resulting from an alteration in the form, location, or availability excluding the cost of bought out materials and services. It is calculated by deducting the value of goods and services purchased from sales revenue.

Value added = sales – cost of goods and services used in producing those sales.

Value added concept is applicable to both manufacturing and service industry. It shows the value addition made by using the organisation's own resources. It may also be expressed as profit before tax, inclusive of employee costs, interest, and depreciation.

Value added is presented in the form of a statement. The format of the statement is given below.

Statement of Value Added for the Year Ended …….

Particulars	Rs.	% of Value Added
Sales Less: Cost of bought in goods and services	Xxx xxx	
Value Added	xxx	100
Applied in the following ways		
1. To employees Wages, salaries, pension, and other benefits	xxx	X
2. To Government Taxes etc.	xxx	X
3. To providers of capital Interest, dividend, etc.	xxx	X
4. To provide for maintenance and expansion of assets Depreciation Retained profits	Xxx	X
Total	xxx	100

Source: www.pksal.com

Let us understand this with the help of an illustration.

From the summarised profit and loss account of RD International Ltd. for the year ending 31.03.2011, prepare the statement of value added.

RD International Ltd.
Profit and Loss Account for the Year Ending 31.03.2011

Particulars	Rs.	Rs.
Sales Less: Cost of sales		100000 55000
Gross profit		45000
Less: Wages Salaries Interest Depreciation Other expenses	5000 10000 15000 2000 3000	35000
Profit Before Tax Less: Tax		10000 4000
Profit After Tax Less: Dividends		6000 1000
Retained earnings (Surplus)		5000

Solution:

RD International Ltd

Statement of Value Added for the Year Ending 31.03.2011

Particulars	**Rs.**	**% of Value Added**
Sales Less: Cost of bought in goods and services (55000+3000)	1,00,000 58,000	
Value Added	42,000	100
Applied in the following ways		
1. To employees Wages, salaries, pension and other benefits (5000+10000)	15,000	35.71
2. To Government Taxes etc.	4,000	9.52
3. To providers of capital Interest, dividend, etc. (15000+1000)	16,000	38.09
4. To provide for maintenance and expansion of assets Depreciation, Retained profits (2000+5000)	7,000	16.67
Total	42,000	100

Value added can also be expressed in the form of ratios.

Value added ratios

It expresses the value added per unit of an input or any other measure. The following are the most commonly used value added ratios.

1. Value added per employee
2. Value added per rupee of labour cost
3. Value added per labour hour
4. Value added per rupee of sales
5. Value added per rupee of capital employed

For example, in the above illustration, the value added by the employees is Rs.15000 (35.71%). Suppose the company has three employees:

Value added per employee
= Rs.15000/3
= Rs.5000
In terms of %,

Value added per employee
= 35.71/3
= 11.9%

Let us now study the advantages of value added concept.

The advantages of value added concept are:

- It can be used as a device to measure performance.
- It can be used as a control tool.
- It helps the company to know the contribution of different departments or divisions to the value created by the company.
- Conversely, it also shows how the value generated by the company was distributed among various contributors.

It may be noted that, of late, the value added concept is also being used as an overall performance measure for the company. The tools used for this purpose are called Economic Value Added (EVA) and Market Value Added (MVA). These tools report the wealth generated by a business undertaking to its stakeholders over a period of time.

7.9 Merits of Management Accounting

So far we have analysed the concept of management accounting. Let us now discuss its merits.

Management accounting has the following merits:

1. Brings systematic regularity in the business activities through efficient planning and organising, which are the end products of management accounting,
2. Ensures maximum return on capital employed because it helps in the functions of planning, co-ordination, and control.
3. Assures better and improved services by management to customers.
4. Removes unacceptable standards or sub-standards.
5. Improves industrial relations by adopting management accounting principles.

6. Eliminates various types of wastages, production defectives, and other work related deficiencies.
7. Uplifts community and development of nation's economy.

7.10 Limitations of Management Accounting

In the previous section we have analysed the merits of management accounting. Let us now discuss the demerits of management accounting.

1. Most of the information used in management accounting is derived from financial accounting records, cost accounting records, or other records. As such, fairness and accuracy of decisions deduced depends to a greater extent upon fairness and accuracy of these original records.
2. Decisions or conclusions derived are insignificant unless properly executed at all levels of business operations.
3. Management accounting is a mere tool for management. It cannot substitute for financial accounting.
4. The evolution has been on account of inter-alia development of new theories in other sciences. Hence there is a need to have a comprehensive knowledge and understanding of all these related disciplines to derive the full advantage.
5. Management accounting is still in its evolutionary stage. Hence, there is an uncertainty in its use.
6. The installation of management accounting is a costly affair and the scope of use is very less.

7.11 Responsibilities of a Management Accountant

A management accountant is commonly referred to as 'Controller'. His main role is to provide accounting information required by the management for planning, controlling, and decision making. The controller also actively involves in planning, controlling, and decision making. He is responsible for fulfilling many vital requirements of the company. The functions of a controller are:

- Designing an accounting information system that ensures smooth and timely flow of the accounting information from where it is generated to where it is required.
- Establishing a mechanism for error proof collection of data.

- Maintaining of cost and management accounting information, which would help in the preparation of financial statements.
- Making forecasts and estimates using most appropriate and scientific methods, which would ensure accuracy of the forecasts and estimates to the maximum possible extent.
- Preparing budgets for all functional areas like production, sales, purchases, cash, and capital budgeting in consultation with the respective managers.
- Preparing and analysing performance reports, control reports, and special managerial reports for planning, controlling and decision making.

Self Assessment Questions

1. If the realisable value of a product is Rs.5950 and the cost of bought in goods and services is Rs.4600, then the value added is ______.
   a. Rs. 4600
   b. Rs. 10550
   c. Rs. 1350
   d. Rs. 5950
2. Management accounting caters to the informational needs of the external users. (True/False)
3. Management accounting reports are public documents. (True/False)
4. Financial accounting is past-oriented. (True/False)
5. Management accounting is future-oriented. (True/False)
6. Management accounting reports are based on GAAP. (True/False)
7. The management accountant is responsible for preparation of final accounts of the company. (True/False)
8. The management accountant supports the top management in decision making. (True/False)

7.12 Summary

Let us recapitulate the important concepts discussed in this unit:

- Management accounting is the presentation of accounting information to assist management in planning, decision making, and controlling.

- The traditional tools of management accounting are ratio analysis, funds flow analysis, cash flow analysis, marginal costing, budgetary control, and standard costing.
- The modern tools are Balanced Scorecard, Cost Management System, and Value Added.
- Though there are some differences in objectives and approaches, management accounting and financial accounting are complementary and not competing.
- A systematic decision making, planning, and controlling process has seven steps.

7.13 Glossary

Balanced score card: An integrated performance measurement technique.

Cost management system: A collection of tools and techniques for strategic management of cost.

Value added: The increase in the realisable value of materials and services.

7.14 Terminal Questions

1. Briefly explain the role of management accounting.
2. Describe the functions of management accounting.
3. Explain the tools of management accounting.
4. What is balanced scorecard?
5. What is Cost Management System?
6. Distinguish between management accounting and financial accounting.
7. What is valued added?

7.15 Answers

Self Assessment Questions

1. 1350 (c)
2. False
3. False
4. True

5. True
6. False
7. False
8. True

Terminal Questions

1. Management guides the objectives of the company. Refer to unit 7.3
2. Management accounting serves as a vital source of data for management planning. Refer to unit 7.5
3. Management accounting provides several tools or techniques to the management for managing its functions .Refer to unit 7.7
4. The balanced scorecard is a contemporary performance measurement system for an organisation. Refer to unit 7.7.2
5. A cost management system is a management planning and control system .Refer to unit 7.7.3
6. There are a few major differences between financial accounting and management accounting .Refer to unit 7.6
7. Value added concept is applicable to both manufacturing and service industry. Refer to unit 7.7.4

7.16 Case Study

Decision Making

During the early 1990s, ProSoft Corporation developed and marketed business applications software for minicomputers, achieving a significant market share and a secure position in the industry. After maturing at this level of success, the company's mission became less clear. Further, software development for minicomputers was seen as costly with little value to the company, as the market for major business applications was saturated and the minor applications had limited markets.

In order to maintain ProSoft's market share, the management decided to enter the growing personal computer field. Major programming was required to make the company's existing software compatible with personal computers (PCs). The management viewed the commitment of all personnel to this project as critical to the continued growth of ProSoft.

After weeks of executive strategy sessions regarding product specifications, the management imposed the task deadlines and set the date for the introduction of its first PC product. The product was an accounting package for general ledger, accounts payable, and accounts receivable applications. Three months prior to the introduction date, ProSoft began advertising and dealer promotion campaigning to announce the new product and to set the introduction date. Several technical problems arose during development, but the staff believed that a few time-saving measures would enable them to complete the package on time to meet the announced date. The management felt considerable pressure to meet this date as ProSoft had previously missed an announced date and suffered the consequences.

Two weeks before the announced date, ProSoft's marketing personnel learned that an updated version of the PC operating software for which ProSoft's new package was designed to interact was to be released shortly. The marketing staff knew that the features could quickly be added to ProSoft's new product to take advantage of the new features in the operating software. However, there would not be time to field test the programme changes. The technical personnel warned the marketing staff of the dangers of releasing a product without proper field testing, but these warnings were not heeded. The management, with encouragement from the marketing staff, made the decision to incorporate the features necessary to take advantage of the new operating software and introduce the product on the scheduled date.

Not long after ProSoft dispatched the first lot of its new software, customers began to complain about processing problems in the accounts payable and accounts receivable modules. Very quickly, it was determined that portions of ProSoft's new package were not compatible with the updated operating software. To correct the problem, the company had to rewrite the software and manuals and replace all existing products. The technical personnel were not dedicated to the development of the next PC product, and this problem fragmented their efforts. The revised product was not available for three months, causing a loss of sales. The financial impact of the error of Rs. 50 crore on the company with an annual profit of Rs. 40 crore was devastating.

Discussion Questions:

1) Identify the steps in the general decision-making process.
2) Using the steps identified in 1, describe the weaknesses in ProSoft's decision-making process.
3) Recommend changes to correct the weaknesses identified in 2.

Source : (Charted Institute of Management Accountants adapted)

Answer to case study

Refer to section 7.4 (fig 7.1)

Hints: Drawbacks in Prosoft's decision making process.

Not clearly defining the objective, unrealistic goal setting, hasty decision making, not exploring all possible alternatives, and not scientifically evaluating all the alternatives.

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Unit 8 Financial Statement Analysis

Structure:

8.1 Introduction
Objectives
8.2 Techniques of Financial Statement Analysis
8.3 Horizontal Analysis (Comparative Statements)
8.4 Trend Analysis
8.5 Vertical Analysis (Common Size Statements)
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Steps in ratio analysis
Classification of ratios
Du pont chart
Solved problems
Advantages of ratio analysis
Limitations of ratio analysis
8.7 Summary
8.8 Glossary
8.9 Terminal Questions
8.10 Answers
8.11 Case Study

8.1 Introduction

We have so far learnt journalising, posting to a ledger, and the preparation of financial statements. The financial statements provide facts about the company to the users. However, for the financial statements to become more meaningful and useful to the users, they need to be understood in the light of policies adopted and the assumptions made to prepare them. Such an attempt to get a better understanding of the present and expected future financial health of the company is called financial statement analysis or simply financial analysis.

The objective of financial analysis is to identify the firm's strengths and weaknesses so that the stakeholders can take decisions based on such inputs. In order to do this, financial analysis provides various tools or techniques.

In this unit, we will understand how to use the tools of financial analysis to analyse financial statements and interpret the financial health of a company.

Objectives:

After studying this unit, you should be able to:

- explain the meaning of financial statement analysis
- analyse the need for financial statement analysis
- apply various tools of financial statement analysis to analyse financial statements
- interpret the financial health of a company using tools of financial statement analysis

8.2 Techniques of Financial Statement Analysis

As mentioned earlier, several tools are available for financial analysis. They are complementary and may be used simultaneously for a more rigorous evaluation of the financial performance and financial position of the company. The tools are:

1. Horizontal analysis (comparative statements)
2. Trend analysis
3. Vertical analysis (common size statements)
4. Ratio analysis
5. Fund flow analysis
6. Cash flow analysis

We shall discuss the first four tools in this unit. Fund flow analysis and cash flow analysis shall be discussed separately in unit 9 and unit 10 respectively.

8.3 Horizontal Analysis (Comparative Statements)

This technique involves comparison of the firm’s current year figures with previous year’s figures. The amount and the percentage of changes are computed and analysed. The change contributes to either the good health or the bad health of the organisation. It may be done with a balance sheet (comparative balance sheet) as well as with profit and loss a/c or income statement (Comparative Profit and Loss a/c / Income Statement.)

Let us understand this with the help of an illustration.

Illustration 1: Comment on the financial performance of Infosys Technologies Ltd. based on the following extract of the company's income statements of two years.

(in Rs. Crore)

Particulars	2010-11	2009-10
Revenue	27,501	22,742
Operating Profit (PBIDT)	8,968	7,861
Interest	-	-
Depreciation and Amortisation	854	905
Provision for taxation	2,490	1,681
PAT from ordinary activities	6,835	6,218
Dividend (inc. dividend tax)	4,013	1,674

(Source: Infosys Technologies Ltd. – Annual Report)

Solution:

Infosys Technologies Ltd.
Horizontal Analysis - Comparative Income Statement
For the Year Ended 31.3.2011

(in Rs. Crore)

Particulars	2010-11	2009-10	Change	
			Amount	%
Revenue	27,501	22,742	4,759	20.93
Operating Profit (PBIDT)	8,968	7,861	1,107	14.08
Interest	-	-		
Depreciation and Amortisation	854	905	-51	-5.64
Provision for taxation	2,490	1,681	809	48.13
PAT from ordinary activities	6,835	6,218	617	9.92
Dividend (inc. dividend tax)	4,013	1,674	2,339	139.73

Comments:

- Revenue has increased by 20.93% while the PBIDT has increased only by 14.08%. This shows that there has been more than proportionate increase in operating expenses.
- There has been a marginal decrease in the depreciation.

- The provision for tax has increased significantly by 48.13%. It implies that the company has been subject to a higher rate of tax or might have lost some tax benefits that it was getting earlier.
- The company's PAT has increased only by 617 (9.92%) while the dividends have increased by 2339 (139.73%). It implies that the company has used reserves to pay out dividends.

8.4 Trend Analysis

This technique involves computation of trend ratios (trend percentages) for a series of years. Horizontal analysis gives a picture of only two years, the current year in comparison with the previous year. This leaves the user with no idea about tracking the growth of the company. To overcome this limitation, trend analysis may be used.

Under this technique, the data to be analysed is taken for a series of years. The base year data is taken as 100. For the subsequent years, the trend percentages are computed.

The formula for computing trend percentage for a particular year is given by:

$$\text{Trend ratio} = \frac{\text{Figure for that particular year}}{\text{Figure for the base year}} \times 100$$

Let us understand this with the help of an illustration.

Illustration 2: Compute trend ratios and comment on the financial performance of Infosys Technologies Ltd. from the following extract of its income statements of five years.

(in Rs. Crore)

Particulars	2010-11	2009-10	2008-09	2007-08	2006-07
Revenue	27,501	22,742	21,693	16,692	13,893
Operating Profit (PBIDT)	8,968	7,861	7,195	5,238	4,391
PAT from ordinary activities	6,835	6,218	5,988	4,659	3,856

(Source: Infosys Technologies Ltd. – Annual Report)

Solution:

Infosys Technologies Ltd.

Trend Analysis

Particulars	2010-11	2009-10	2008-09	2007-08	2006-07
Revenue	27,501	22,742	21,693	16,692	13,893
Operating Profit (PBIDT)	8,968	7,861	7,195	5,238	4,391
PAT from ordinary activities	6,835	6,218	5,988	4,659	3,856
Trend ratios					
Revenue	197.95	163.69	156.14	120.15	100
Operating Profit (PBIDT)	204.24	179.03	163.86	119.29	100
PAT from ordinary activities	177.26	161.26	155.29	120.82	100

Comment: The Revenue and Operating Profit (PBIDT) have almost doubled in four years. The PAT from ordinary activities has increased by 77.26% in the same period.

8.5 Vertical Analysis (Common Size Statements)

It involves analysing the proportion of each component of the financial statement to its total. It is presented in the form of a statement called common size statement.

In a common size income statement, the sales are converted into 100 and the components are proportionately converted.

In a common size balance sheet, the total of the balance sheet (i.e., total of assets side and total of the liabilities side) is converted into 100 and the components are proportionately converted.

The common size statements show if the proportion of the components are normal or abnormal. For example, if the balance sheet total is Rs.2,50,000 and the long-term debts is Rs.2,00,000, then it shows that long-term debts constitute 80% (i.e., 2,00,000/2,50,000) of the total funds.

Illustration 3:

Prepare a common size statement from the following income statement.

Income Statement for the Year Ending 31st March, 2011

Particulars	Rs. ('000)
Sales Less: Cost of goods sold Materials Wages Factory Over Heads(OHs)	200000 75000 50000 10000
Gross profit Less: Selling and distribution OHs Less: Administration OHs	65000 15000 20000
Earning Before Interest and Tax Less: Interest	30000 10000
Earning Before Tax Less: Tax	20000 5000
Net Profit	15000

Solution:

Common Size Income Statement
for the year ending 31st March, 2011

Particulars	Rs. (000)	%
Sales Less: Cost of goods sold Materials Wages Factory OHs	200000 75000 50000 10000	100 37.5 25.0 5.0
Gross profit Less: Selling and distribution OHs Less: Administration OHs	65000 15000 20000	32.5 7.5 10.0
Earning Before Interest and Tax Less: Interest	30000 10000	15.0 5.0
Earning Before Tax Less: Tax	20000 5000	10.0 2.5
Net Profit	15000	7.5

8.6 Ratio Analysis

Absolute numbers notify very little. Assume that two companies A and B, operating within the same industry vertical, submit the following information:

	Company A	Company B
Net profit	10000	100000

One would say that Company B made more profits. But if it is given that the sales of Company A is Rs.20000 and sales of Company B is Rs.400000, then we understand the Company A is more efficient than Company B because Company A made a profit of 50% (10000/20000) whereas Company B made a profit of only 25% (100000/400000).

Therefore, ratios are very useful.

8.6.1 Meaning of ratio

A ratio represents a relationship between two numbers. An accounting ratio represents a relationship between two accounting numbers.

A ratio can be expressed in the following three forms:

1. Proportion
2. Percentage
3. Turnover rate

8.6.2 Steps in ratio analysis

The following three steps are used in ration analysis.

1. Calculate the firm's ratios for the current and/or recent period.
2. Compare these ratios to those calculated in the past records. The purpose of this comparison is to identify trends in the firm's ratios. This is known as trend analysis.
3. Compare the ratios to industry averages to show how the company can be compared with firms of the same size in its industry. This process is known as cross-sectional analysis.

Self Assessment Questions

1. Vertical analysis involves computation of trend ratios. (True/False)
2. In horizontal analysis, comparative statements are prepared. (True/False)
3. Trend analysis involves preparation of common size statements. (True/False)

8.6.3 Classification of ratios

There are different types of ratios which may be classified as shown in figure 8.1.

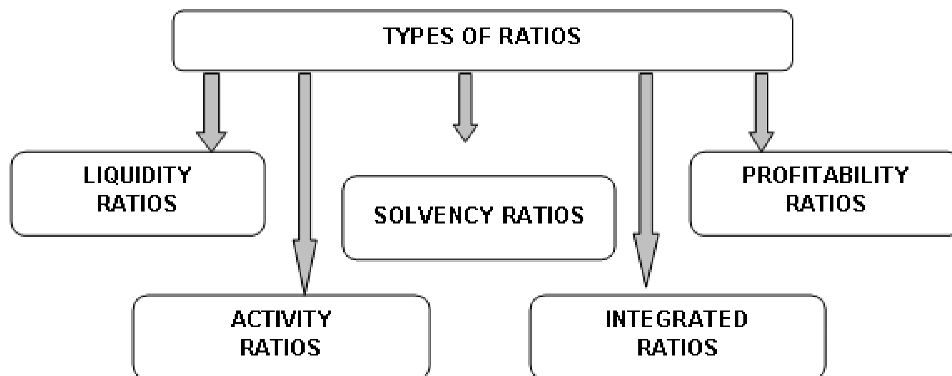

Figure 8.1: Types of Ratios

Let us now discuss each type of ratio in detail.

Liquidity ratios

Liquidity is the ability of a firm to satisfy its short-term obligations as they become due for payment. It reflects the short-term solvency of the firm. The ratios which indicate the liquidity of the firm are:

1. Net working capital
2. Current ratios
3. Acid test or quick ratio
4. Super quick ratio

1. ***Net working capital*** – It is the excess of current assets over current liabilities.

   $$\text{Net Working Capital}(NWC) = \text{Current Assets}(CA) - \text{Current Liabilities}(CL)$$

   If CA is more than CL, it is called positive NWC and vice versa.

2. ***Current ratio –*** It is the ratio of total current assets to total current liabilities. It indicates the rupees of current assets available for each rupee of current liability payable.

$$\text{Current Ratio (CR)} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

The ideal CR is 2:1.

- The current assets of a firm include cash and bank balances, marketable securities, inventory of raw materials, semi-finished and finished goods, debtor's net provision for bad and doubtful debts, bills receivable, and prepaid expenses.
- The current liabilities include trade creditors, bills payable, bank credit, and provision for taxation dividends payable and outstanding expenses.

3. ***Quick ratio –*** It is also known as liquid ratio or acid test ratio. It is excluded from CA inventory as it takes more time to be converted into cash.

$$\text{Liquid Ratio} = \frac{\text{Current Assets} - (\text{Inventory and Prepaid expenses})}{\text{Current Liabilities}}$$

Acid test ratio of 1:1 is considered satisfactory. This ratio is a more rigorous and penetrating test of the liquidity position of a firm.

4. ***Super quick or cash ratio –*** It is calculated by dividing the super quick assets by the current liabilities of a firm. The super quick current assets are cash and marketable securities. This ratio is the most rigorous test of a firm's liquidity position.

$$\text{Super Quick Ratio} = \frac{\text{Cash and Marketable Securities}}{\text{Current Liabilities}}$$

Illustration 4: Given: Current ratio is 2.5 and working capital is Rs.1,80,000. Calculate the current assets and current liabilities.

Solution:

Current ratio = CA/CL

2.5 = CA/1

CA = 2.5 (In the absence of any value, the current liability is always taken as 1 unit)

Working capital = CA – CL

= 2.5 - 1

Working capital = 1.5

For 1.5 WCR = Rs.1,80,000 (Working capital value)

For 2.5 CAR, = Rs.1,80,000 x 2.5/1.5

1. Current assets = Rs.3,00,000

For 1.0 CLR = Rs. 1,80,000 x 2.5/1

2. Current liabilities = Rs.1,20,000

Illustration 5: Given: Current ratio 1.5:1; quick ratio 1:1, and current liabilities is Rs.50,000. Calculate current assets, quick assets, and inventory.

Solution:

1. Current ratio = 1.5: 1 [CA/CL]

   Current liabilities = Rs.50,000

   Current ratio (1.5) = CA/50,000

   Current assets = Rs.75,000

2. Quick assets (QR) = QA / 1 [QA/CL]

   1 = QA / 50,000

   Quick assets = Rs.50,000

3. Inventory = CA – QA

   = Rs. 75,000 – Rs. 50,000

   Inventory = Rs. 25,000

So far we have studied the ratios which indicate the liquidity of the firm. Let us now discuss solvency ratios.

Solvency or capital structure or leverage ratios

The long-term lenders or creditors would judge the soundness of a firm on the basis of the long-term financial strength. There are two aspects of long-term solvency of a firm:

1. The ability to repay the principal when due
2. Regular payment of the interest

Accordingly, there are two types of leverage ratios. Table 8.1 depicts the two types of leverage ratios

Table 8.1: Types of Leverage Ratios

Capital structure ratios	Coverage ratios
Debt-equity ratio	Interest coverage ratios
Debt-asset ratio	Dividend coverage ratios
Proprietor ratio	Total fixed charges coverage ratios
	Cash flow coverage ratios
	Debt services coverage ratios

Let us now discuss them in detail.

Capital structure ratios

1. *Debt-equity ratio* -– The ratio of borrowed funds and owners' capital is known as debt-equity ratio. This ratio reflects the relative claims of creditors and shareholders against the assets of the firm. Debt-equity ratio is calculated as follows:

$$\text{Debt Equity Ratio} = \frac{\text{Long term debt}}{\text{Shareholder's equity}}$$

2. *Debt-asset ratio* – It measures the share of total assets financed by outside funds.

$$\text{Debt Asset Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

3. *Proprietary ratio* – It indicates the proportion of total assets financed by the owners.

$$\text{Proprietary Ratio} = \frac{\text{Proprietor's Fund}}{\text{Total Assets}}$$

- Higher ratio, say more than 75% shows lesser dependence on external sources.
- Lower ratio, say less than 60% shows more dependence on external sources.

4. *Capital gearing ratio* – It shows the mix of finance employed in the firm.

$$\text{Capital gearing ratio} = \frac{\text{Fixed Income bearing securities}}{\text{Total Equity}}$$

5. Coverage ratios

These ratios measure the firm's ability to pay certain fixed charges. The obligations of the creditors are met out of the earnings or operating profits. These claims consist of the following:

1. Interest on loans
2. Preference dividend
3. Amortisation of principal or repayment of the instalment of loans or redemption of preference capital on maturity

Table 8.1 depicts the important coverage ratios.

Let us now discuss the coverage ratios in detail.

***6. Interest coverage* –** It measures the firm's ability to make interest payments on long-term debts.

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

7. Dividend coverage – It measures the ability of a firm to pay dividend on preference shares.

$$\text{Dividend Coverage (Preference)} = \frac{\text{Net Profit after Tax}}{\text{Preference Dividend}}$$

Illustration 6: The Balance Sheet of Dravid Ltd. is as follows:

Assets: Fixed Assets	10,00,000
Current Assets	5,00,000
Represented by:	
Liabilities: Trade creditors	1,00,000
Reserves and surplus	1,00,000
10% Debentures	2,00,000
6% Preference Share capital	3,00,000
Equity Share capital	8,00,000

Calculate the debt ratio and debt-equity ratio.

Solution:

1. Debt ratio = Total liabilities to outsiders/Total assets
   = (Debentures + trade creditors)/ (Fixed + current assets)
   = (2,00,000 + 1,00,000) / (10,00,000 + 5,00,000)
   = 3,00,000 / 15,00,000
   = **1 : 5**

   Interpretation: The ratio indicates that the firm has Rs.5 assets for every rupee of long-term liability. Hence the financial position is good.

2. Debt –equity ratio = Outsiders' funds/shareholders' equity or

$$= \frac{\text{(Debentures + Trade Creditors)}}{\text{(Eq Sh capital + Pref Sh cap + Reserves)}}$$

$$= \frac{(2,00,000 + 1,00,000)}{(8,00,000 + 3,00,000 + 1,00,000)}$$

   = 3,00,000 / 12,00,000
   = **1 : 4**

Interpretation: the ratio indicates that the firm has Rs.4 equity for every rupee of long-term liability. Hence the financial position is good.

So far we have studied leverage ratios and the types of leverage ratios. Let us now discuss profitability ratio.

Profitability ratio

Profitability ratios are designed to provide answers to the following questions:

- Is the profit earned by the firm adequate?
- What rate of return does it represent?
- What is the rate of profit for various divisions and segments of the firm?
- What was the amount paid in dividends?
- What is the rate of return to equity-holders?

The following are the important profitability ratios:

1. ***Gross profit margin –*** It is the ratio of gross profit to sales.

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

2. ***Operating profit ratio –*** It is the ratio of operating profit to sales.

$$\text{Operating Profit Ratio} = \frac{\text{EBIT}}{\text{Net Sales}}$$

3. ***Net profit margin –*** It is the ratio of net profit to sales.

$$\text{Net Profit Ratio} = \frac{\text{EAT}}{\text{Net Sales}}$$

4. ***Operating cost ratio –*** It is the ratio of operating cost to net sales. It is computed by dividing expenses by sales.

$$\text{Operating Ratio} = \frac{\text{Cost of goods sold} + \text{Operating expenses}}{\text{Net Sales}} \times 100$$

Cost of goods sold = Opening stock + Purchase – Closing stock
Operating expenses = Administrative expenses + Financial expenses + Selling expenses

The expenses ratio should be compared over a period of time with the industry average. For manufacturing concern, an operating ratio between 75% and 80% is expected.

5. ***Expenses ratios –*** These ratios indicate the ratio of various operating expenses to sales. Operating expenses include cost of goods sold, administrative expenses, selling, distribution expense, and financial expenses but excludes taxes, dividends, and extraordinary losses.

$$\text{Expense ratio} = \frac{\text{(Concerned) Expense}}{\text{Net Sales}} \times 100$$

6. ***Return on Capital Employed (ROCE) –*** It indicates the return earned on the capital employed in the firm.

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital employed}} \times 100$$

EBIT= Earnings before Interest and Tax
Capital employed = Own funds (equity) + Borrowed funds (Debt)

7. ***Return on shareholders' equity –*** It measures the return on the total equity funds of ordinary shareholders.

$$\text{ROEF} = \frac{\text{Net profit after tax} - \text{Preference dividends}}{\text{Shareholder's equity or Net worth}} \times 100$$

Illustration 7: Rangadas Ltd. provides the following information:
Cash sales Rs.8,00,000
Credit sales Rs.10,00,000
COGS Rs.15,80,000
Return Inwards Rs.20,000
Calculate Gross Profit Ratio and ratio of COGS.

Solution:

Gross Sales = Cash Sales + Credit Sales
= 8,00,000 + 10,00,000
= 18,00,000

Net Sales = Gross Sales – Return Inwards
= 18,00,000 – 20,000
= 17,80,000

Gross Profit = Net Sales – COGS
= 17,80,000 – 15,80,000
= 2,00,000

1. **Gross Profit Ratio = (Gross Profit / Net Sales) x 100**
= [2,00,000 / 17,80,000] x 100
= **11.2 %**

2. **Ratio of COGS = 100 – GP ratio**
= 100 -11.2
= **88.8%**

So far we have studied profitability ratios and the types of profitability ratios. Let us now discuss activity ratios.

Activity ratios or efficiency ratios or turnover ratios

They are concerned with measuring the efficiency in asset management. The efficiency with which the assets are used would be reflected in the speed and rapidity with which assets are converted into sales. The important turnover ratios are as follows:

1. *Stock turnover ratio* – This ratio examines how quickly inventory is converted into cash. It indicates the number of times the inventory is replenished in a year.

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

Inventory holding period – It indicates the time interval between replenishment of inventory

$$\text{Inventory Holding Period} = \frac{\text{12 months}}{\text{Inventory Turnover Ration}}$$

2. *Debtor's turnover ratio* – It indicates the average number of times the debtors make payment in a year.

$$\text{Debtor's Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Debtors}}$$

Debt collection period: It indicates the time interval between payments by debtors.

$$\text{Debt Collection Period} = \frac{\text{Months / weeks / days in a year}}{\text{Debtor's Turnover Ratio}}$$

3. *Creditor's turnover ratio* – It is the ratio between net credit purchase and the average amount of creditors outstanding during the year.

$$\text{Creditor's Turnover Ratio} = \frac{\text{Net Credit Purchase}}{\text{Average Creditors}}$$

$$\text{Creditor's Payment Period} = \frac{\text{12 months}}{\text{Creditor's Turnover Ratio}}$$

4. *Assets turnover ratio* – It indicates the efficiency with which firms use all their assets to generate sales. It is based on the relationship between cost of goods sold and assets of a firm.

$$\text{Total Assets Turnover} = \frac{\text{Cost of goods sold}}{\text{Average total assets}}$$

$$\text{Fixed Assets Turnover} = \frac{\text{Cost of goods sold}}{\text{Average fixed assets}}$$

5. *Capital turnover ratio* – It indicates the efficiency with which firms uses its capital to generate sales. It is based on the relationship between cost of goods sold and the capital of a firm.

$$\text{Capital Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average capital employed}}$$

Lower ratio shows the lower ability to generate sales.

Illustration 8: Birla Cements Ltd. provides the following:
Stock: Opening Rs.75,000, Closing Rs.1,00,000,
Credit Sales Rs.2,00,000, Cash Sales Rs.50,000, and Gross Profit 25 %.
Calculate the Inventory Turnover Ratio.

Solution:

Net Sales = Cash Sales + Credit Sales
= 2,00,000 + 50,000
= **2,50,000**

Gross Profit = 25% of 2,50,000 (Net Sales)
= **62,500**

COGS = Net Sales – Gross Profit
= 2,50,000 – 62,500
= **1,87,500**

Average Inventory = (Opening + Closing stock) / 2
= (75,000 + 1,00,000)/2
= **87,500**

Inventory Turnover Ratio = COGS / Average Inventory
= 1,87,500 / 87,500
= **2.14 times**

Activity 1:
Total sales of a firm is Rs.5,00,000 of which the credit sales are Rs.3,65,000. Sundry debtors and Bills receivable are Rs.50,000 and Rs.2,000 respectively. Calculate the Debtors Velocity

Activity 2:
Total purchases is Rs.1,00,000. Cash purchases Rs.20,000. Discount Provision on creditors is Rs.1,000. Purchase returns is Rs.2,000. Creditors at close is Rs.30,000. Bills payable at close is Rs.25,000. Calculate Creditors Velocity.

Activity 1 : Solution

Debtor's Turnover Ratio = Net Credit Sales / (Debtors + Bills Receivables)
= 3,65,000/ (50000 + 2000)
= 7.02

Debtors' Velocity = Number of days in a year / Debtor's turnover ratio
(Drs. collection period) = 365/7.02
= **52 days**

Note: Number of days in a year is taken as 365 days.

Activity 2: Solution:

Credit purchases = Total purchase – cash purchase – purchase return
= 1,00,000 – 20,000 – 2,000
= **Rs.78,000**

Creditors' Turnover Ratio
= Net credit purchases / (Creditors + Bills Payable)
= 78000 / (30000 + 25000)
= 1.42

Creditors' Velocity) = Number of days in a year / Creditor's turnover ratio
(Creditor's payment period) = 365 /1.42
= 257 days

Note: The Reserve for discount on creditors should not be considered for calculating the net credit sales.

Illustration 9: Total sales of a firm is Rs.5,00,000 of which the credit sales are Rs.3,65,000. Sundry debtors and bills receivable are Rs.50,000 and Rs.2,000 respectively. Calculate the Debtors' Velocity.

Solution:

Debtor's Turnover Ratio = Net Credit Sales / (Debtors + Bills Receivables)

= 3,65,000/ (50000 + 2000)

= 7.02

Debtors' Velocity = Number of days in a year / Debtor's turnover ratio

(Debtor's collection period) = 365/7.02

= **52 days**

Note: Number of days in a year is taken as 365 days.

Illustration 10: Calculate Creditors' Velocity from the data given below:

Total purchases Rs.1,00,000

Cash purchases Rs.20,000

Discount provision on creditors Rs.1,000

Purchase returns Rs.2,000

Creditors at close Rs.30,000

Bills payable at close Rs.25,000

Solution:

Credit purchases = Total purchase – cash purchase – purchase return

= 1,00,000 – 20,000 – 2,000

= **Rs.78,000**

Creditor's Turnover Ratio = $\frac{\text{Net credit purchases}}{\text{(Creditors + Bills Payable)}}$

= 78000 / (30000 + 25000)

= 1.42

Creditors' Velocity = $\frac{\text{No. of days in a year}}{\text{Creditor's turnover ratio}}$

(Creditor's payment period) = 365 /1.42

= 257 days

Note: The reserve for discount on creditors should not be considered for calculating the net credit sales.

Self Assessment Questions

4. If a company ploughs back profits, its debt equity ratio will __________.
   a. Increase
   b. Decrease
   c. Not change
5. A company's stock turnover ratio is 4 times. Its inventory holding period is __________.
   a. 3 months
   b. 4 months
   c. 12 months
6. If a company purchases treasury bills, its acid test ratio will _________.
   a. Increase
   b. Decrease
   c. Not change
7. A company's net working capital is Rs.10,000 and its current ratio is 2, its current assets and current liabilities are respectively__________.
   a. 30000 and 20000
   b. 20000 and 10000
   c. 30000 and 10000
8. If a company sells one of its old machinery for Rs.35,000, the current ratio will __________.
   a. Increase
   b. Decrease
   c. Not change

8.6.4 Du pont chart

Du pont chart is a method of integrated analysis of ratios. It shows the overall profitability (earning power) of a firm in the form of a chart. It shows how the earning power of a company is affected by various component parts.

Figure 8.2 shows the Du pont chart.

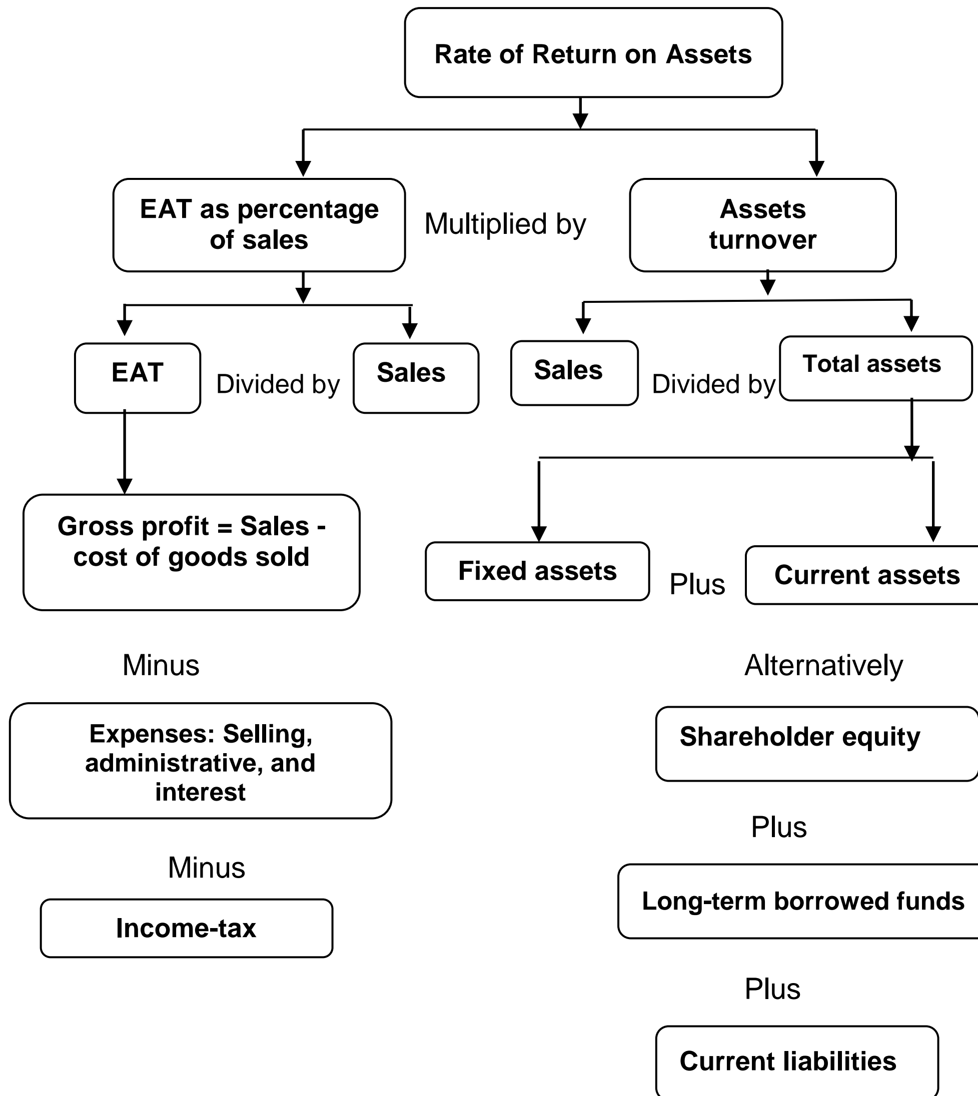

Figure 8.2: Du Pont Chart

Return on investments represents the earning power of the company. It depends on net profit ratio and capital turnover ratio. A change in any of these ratios will change the firm's earning capacity. This chart shows how the return on capital employed is affected by various factors such as cost of goods sold, change in working capital, change in selling and administrative

expenses, etc. This chart helps the management in detecting the core issues that confront the management and in the effective use of capital.

8.6.5 Solved problems

Problem 1: The income statement of Vignesh Ltd. is as follows:

To Opening Stock	2,00,000	By Sales	12,00,000
Purchases	8,00,000	Closing Stock	1,00,000
Direct Expenses	1,00,000		
Gross Profit	2,00,000		
	13,00,000		**13,00,000**
To Admn Expenses	1,00,000	By Gross Profit	2,00,000
Selling Expenses	80,000	Profit on sale of Investments	60,000
Non-Operating exp	40,000	Dividends received	40,000
Net Profit	**80,000**		
	3,00,000		**3,00,000**

Calculate the Gross Profit Ratio, Net Profit Ratio, Operating Ratio, Operating Profit Ratio, and Expense Ratio.

Solution:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$= \frac{2,00,000}{12,00,000} \times 100$$

$$= \mathbf{16.67\%}$$

$$\text{Net Profit ratio} = \frac{\text{Net Profit after tax}}{\text{Net Sales}} \times 100$$

$$= \frac{80,000}{12,00,000} \times 100$$

$$= \mathbf{6.67\%}$$

$$\text{COGS} = \text{Sales} - \text{Gross Profit}$$

$$= 12,00,000 - 2,00,000$$

$$= 10,00,000$$

$$\text{Operating Ratio} = \frac{\text{COGS + operating expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{10,00,000+(1,00,000+80,000)}{12,00,000} \times 100$$

$$= \mathbf{98.33\ \%}$$

Operating Profit Ratio = 100 – 98.33%
= **1.67%**
Expenses Ratio = Operating Expenses/Net sales x 100
= 1,80,000/ 12,00,000 x 100
= **15.00 %**

Problem 2: The capital structure of M/s NDW and M/s GDF Ltd. are as follows:

	NDW	GDF
Equity Share Capital (Rs.)	10,00,000	6,00,000
6 % Preference Share Capital	3,00,000	4,00,000
7 % Debentures	-	2,00,000
Reserves and Surplus	2,00,000	2,00,000

Solution:

Capital Gearing Ratio = $\frac{\text{Fixed Income Bearing Securities}}{\text{Total Shareholders' Equity}}$

NDW = 3,00,000/ 12,00,000
= **0.25**
GDF = 6,00,000/ 8,00,000
= **0.75**

The capital of NDW is low geared when compared to GDF.

Problem 3:

The capital structure of Arvind Ltd. is as follows:

Equity Share Capital Rs.10,00,000
Redeemable Preference Capital Rs.5,00,000
6% Debentures Rs.3,00,000
Long-term liabilities Rs.2,00,000
Reserves and surplus Rs.2,00,000

Calculate the capital gearing ratio and ratio of total Investment to long-term liabilities.

Solution:

Capital gearing ratio = Fixed Cost bearing securities / Total Capital
= 10,00,000 / 12,00,000
= **0.83 :1**

Total investment to LTL = Capital Employed / Long-term liabilities
= 22,00,000 / 10,00,000
= **2.2 :1**

Problem 4: Draw the Balance Sheet for the following information provided by Sarawath Ltd..

a. Current Ratio : 2.50
b. Liquidity Ratio : 1.50
c. Net Working Capital : Rs.300000
d. Stock Turnover Ratio : 6 times
e. Ratio of Gross Profit to Sales : 20%
f. Fixed Asset Turnover Ratio : 2 times
g. Average Debt collection period : 2 months
h. Fixed Assets to Net Worth : 0.80
i. Reserve and Surplus to Capital : 0.50

Balance Sheet

Liabilities	**Rs.**	**Assets**	**Rs.**
Capital	500000	**Fixed Assets**	**600000**
Reserves and Surplus	250000	Inventories	200000
Long-term Debt	150000	Debtors	250000
Current Liabilities	200000	Bank	50000
Total	**1100000**	**Total**	**1100000**

Working Notes

If Current Liabilities = 1	
Current Assets = 2.5	
Working Capital (2.5 -1) = 1.5	**= 300000**
Therefore Current Assets (2.5/1.5) x 300000	**= 500000**
Current Liabilities (1/1.5) x 300000	**= 200000**

Liquidity Ratio = 1.5	
Current Liabilities = 200000	
Therefore Liquid Asset (200000 x 1.5)	**=300000**
Inventories (Current asset – Liquid asset)	**=200000**

Stock Turnover Ratio = 6 times	
Cost of sales (6 x 200000)	**= 1200000**
Gross Profit Ratio = 20%	
Gross Profit	
If Sales is 100; Gross Profit is 20	
Hence cost of sales is (100-20) = 80	
Therefore Gross Profit is (20/80) x 1200000	**= 300000**
Sales (Cost of Sales + Gross Profit)	**=1500000**

Fixed Asset Turnover ratio = 2 times	
(Cost of sales/Fixed assets)	
Therefore Fixed Assets (1200000/2)	**= 600000**

Debtor's Collection Period = 2 months	
(Months in a year /Debtor's turnover)	
Debtor's Turnover Ratio (12/2) = 6 times	
(Sales/ Debtors)	
Debtors (1500000/6)	**= 250000**

Fixed Assets to Shareholders' Net worth = 0.80	
Share holders' Net worth(600000/0.80)	**=750000**

Reserves and Surplus to Capital = 0.50	
If capital is 1: reserves and Surplus is 0.5	
Reserves and Surplus + Capital = Shareholder's Net worth (0.5 +1 =1.5)	
Reserves and Surplus (7500000 x(0.5/1.5)	**=250000**
Therefore share Capital	**=500000**

8.6.6 Advantages of ratio analysis

The various advantages of ratio analysis are as follows:

- It helps in the financial forecasting and planning activities.
- It helps in making strategic decisions.
- It helps in assessing firm's progress and performance and inter-firm comparison with industry average.

- Financial Solvency: It helps in assessing the firm's short-term and long-term solvency.
- It is a more effective way of analysis and presentation.
- It evaluates the overall efficiency of the business entity.
- It helps in ensuring effective control of a business.
- Financial ratios are very helpful in early and proper diagnosis of financial health of the firm.

8.6.7 Limitations of ratio analysis

The basic limitations of ratio analysis stems from the limitations of accounting (financial statements) discussed in unit 1. This is because the accounting ratios are computed from the accounting figures in the financial statements (please refer section 1.7).

8.7 Summary

Let us recapitulate the important concepts discussed in this unit:

- Financial analysis is done to have a complete understanding of the financial health of the company.
- Many tools are available for doing financial analysis. The most important of them is the ratio analysis.
- It involves calculating and interpreting financial ratios. Ratios may be calculated from the firm's income statement or balance sheet. Ratios are classified into liquidity, solvency, profitability, activity, and integrated ratios.

8.8 Glossary

Horizontal analysis: Comparison of the firm's current year figures with the previous year's figures.

Trend analysis: Computation of trend ratios (trend percentages) for a series of years.

Vertical analysis: Analysing the proportion of each component of the financial statement to its total.

8.9 Terminal Questions

1. Calculate current ratio and acid test ratio from the following information:
   Cash in hand Rs. 3,000
   Cash at Bank Rs. 65,000
   Bills receivable Rs. 10,000
   Stock Rs.1,20,000
   Debtors Rs. 80,000
   Prepaid expenses Rs. 2,000
   Creditors Rs.1,20,000
   Bills payable Rs. 20,000

2. **Calculate debt equity ratio and proprietary ratio from the following information:**

Balance Sheet as on 31.03.2011

Equity share capital	5,00,000	Fixed assets	10,00,000
Preference share capital	3,00,000	Current assets	4,00,000
Reserves and Surplus	2,00,000		
8% Debentures	3,00,000		
Current Liabilities	1,00,000		
Total	**14,00,000**	**Total**	**14,00,000**

3. The current assets and current liabilities are Rs. 16,00,000 and Rs. 8,00,000 respectively. What is the effect of **each** of the following transactions individually and totally on the current ratio:
   1. Purchase of new machinery for Rs. 5,00,000.
   2. Purchase of new machinery for Rs.10,00,000 on a medium-term loan from a bank with 20% margin.
   3. Payment of a dividend of Rs. ,00,000 of which Rs. 0.47 lakh was tax deducted at source.
   4. Materials purchased costing Rs. 5,00,000 with respect to which bank financed Rs. 3,00,000.

4. The current ratio is 2:1. Which of the following suggestions would improve the ratio? Which would reduce it and which would not change it?
   a) To pay a current liability
   b) To sell a motor car for cash at loss

c) To borrow money for short-time on an interest bearing promissory note
d) To purchase stock for cash
e) To give an interest bearing promissory note to a creditor to whom money was to be paid.

8.10 Answers

Self Assessment Questions

1. False
2. True
3. False
4. b
5. a
6. c
7. b
8. a

Terminal Questions

1. Current ratio 2:1 and Acid test ratio 1.14:1
2. Debt Equity ratio 0.4:1 ; Proprietary Ratio 0.5:1
3. (1) Decrease (2) decrease (3) decrease (4) increase
4. (a) increase (b) increase (c) decrease (d) no change (e) no change

8.10 Case Study

Ratio Analysis

You have been supplied the data of SP Ltd. and its industry averages.

Balance Sheet as on 31st March, 2011

Liabilities	Rs. ('000)	Assets	Rs. ('000)
Equity share capital	1200	Net Fixed Assets	605
10% debentures	230	Cash	220
Sundry creditors	165	Sundry debtors	275
B/P	220	Stock	825
Other current liabilities	110		
	1925		1925

Income Statement for the Year Ending 31st March, 2011

Particulars	Rs. ('000)	Rs. ('000)
Sales		2750
Less: Cost of goods sold		
Materials	1045	
Wages	660	
Factory OHs	324.5	2029.5
Gross profit		720.5
Less: Selling and distribution OHs	275	
Less: Administration OHs	307	582
Earnings Before Interest and Tax		138.5
Less: Interest		23
Earning Before Tax		115.5
Less: Tax		40.425
Net Profit		75.075

Ratios

Ratio	Industry	SP Ltd
Current ratio	2.4	
Sales/Debtors	8.0	
Sales/Stock	9.8	
Sales/Total Assets	2.0	
Net Profit/sales (%)	3.3	
Net Profit/ Total Assets (%)	6.6	
Net Profit/net worth (%)	12.7	
Total debt/ Total Assets (%)	63.5	

Discussion Questions:

1. Determine the indicated ratios for the company.
2. Indicate the company's strengths and weaknesses as shown by your analysis.

Source : Khan and Jain, Management Accounting 4/e, TMH

Solution to case study

Ratio	Computation	SP Ltd.	Industry	Remarks about SP Ltd.
CA/CL	1220/495	2.7	2.4	Better
Sales/Debtors	2750/275	10.0	8.0	Good
Sales/Stock	2750/825	3.3	9.8	Poor
Sales/Total Assets	2750/1925	1.4	2.0	To improve
Net Profit/Sales (%)	75.075/2750	2.7	3.3	To improve
Net Profit/ Total Assets (%)	75.075/1925	3.9	6.6	Poor
Net Profit/Net worth (%)	75.075/1200	6.3	12.7	Poor
Total debt/ Total Assets (%)	725/1925	37.7	63.5	Good

Strengths:

- Current ratio and debtor's turnover ratios are better indicating better debt collection period.

Weaknesses:

- Very high inventory levels
- Lower turnover, net margin and ROE

References:

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Unit 9 Funds Flow Analysis

Structure:

9.1 Introduction
Objectives
9.2 Definitions
Funds
Flow of funds
Analysis of flow of funds
9.3 Objectives of Analysing Flow of Funds
9.4 Steps in Analysing Flow of Funds
Analysing changes in working capital
Computing funds from operations
Identifying sources and applications of funds
9.5 Preparing the Funds Flow Statement
9.6 Interpretation of Funds Flow Statement
9.7 Summary
9.8 Glossary
9.9 Terminal Questions
9.10 Answers
9.11 Case Study

9.1 Introduction

In the previous unit we learnt about an important tool of financial analysis – ratio analysis. The ratio analysis throws light on the profitability and the soundness of financial position of the company. However, it does not speak about the soundness of the financial decisions and financial policy of the company. In order to evaluate the soundness of financing and investment decisions of the company, we must analyse the changes in the financial position of the company from one period to another. For this purpose, a statement of changes in financial position is prepared.

Two important statements of changes in financial position are:

- Fund flow statement
- Cash flow statement

In this unit, we will analyse funds flow statement and in the next unit, the cash flow statement.

Objectives:

After studying this unit, you should be able to:

- explain the meaning of “funds” and “flow of funds”
- appreciate the need for analysing of flow of funds
- identify sources and applications of funds
- prepare statement of changes in working capital
- prepare adjusted profit and loss account
- prepare fund flow statement
- comment on the financial policy of the company by interpreting the fund flow statement

9.2 Definitions

Before we proceed to understand how to make an analysis of flow of funds, it is important for us to be clear about the exact meaning of the terms used. These terms are given in the next three sub sections.

9.2.1 Funds

There are two concepts of working capital.

- ***Gross working capital* –** Gross working capital refers to the firm’s investment in current assets.
- ***Net working capital* –** Net working capital means excess of current assets over current liabilities.

Therefore, the net working capital can be calculated as,

Net working capital = Funds= Current assets - Current liabilities

***Current assets* –** Assets which are held or receivable within a year or within the operating cycle of the business. They are intended to be converted into cash within a short period of time.

***Current liability* –** Obligation which has to be discharged within a year.

Table 9.1 shows the examples of current assets and current liabilities.

Table 9.1: Examples of Current Assets and Current Liabilities

Current assets	Current liabilities
• Cash and bank balances	• Accounts payable
• Inventory	• Sundry creditors
- Goods that are held in stock for sale in the ordinary course of business. (Finished goods)	• Bank overdraft
- Work in progress	• Unclaimed dividends
- Raw materials and semi finished goods	• Provision for taxation*
• Sundry debtors	• Proposed dividends
• Temporary investments	• Short-term loans
• Marketable securities	• Outstanding expenses
• Pre-paid expenses	• Income received in advance
• Outstanding incomes	• Advances or deposits from dealers or purchasers
• Accounts receivables	
• Bills receivables	

* Provision for taxation can also be shown as non-current liability.

Non-current assets – Assets other than current assets that are realisable in cash or sold or consumable after one year or after a considerable period of time. Fictitious assets are those expenses which cannot be written off during the period of their incidence. For example, promotional expenses of a company which cannot be treated as expenditure in the year of incidence are shown as fictitious assets.

Non-current liabilities – Obligations, other than current liabilities, that are likely to mature after a period of one year. Table 9.2 shows the examples of non-current assets and non-current liabilities.

Table 9.2: Examples of Non-Current Assets and Non-Current Liabilities

Non-current liabilities	Non-current assets
• Share capital • Long-term loans • Debentures • Share premium a/c • Forfeited shares a/c • Profit and loss a/c (credit balance) • Appropriation of profits • Provision for taxation • Provision for depreciation • Capital reserve	• Fixed assets • Fictitious assets like goodwill, patents, copyrights, and trademarks • Long-term investments • Profit and loss a/c (debit balance) • Discount on issue of shares and debentures • Deferred expenditures like preliminary expenses, advertising expenses

9.2.2 Flow of funds

The term 'flow' refers to change and therefore the term 'funds flow' refers to 'change in funds' or 'change in working capital'. In other words, any increase or decrease in working capital means 'flow of funds'.

9.2.3 Analysis of flow of funds

It refers to the process of understanding the reasons that were responsible for the change in the working capital. It involves identifying the sources and applications of funds (discussed in section 9.4.1).

9.3 Objectives of analysing flow of funds

The analysis of flow of funds is undertaken with the objective of understanding the following:

- What have been the sources of working capital during the current year?
- What have been the applications of working capital during the current year?
- Were the long-term investments financed using the long-term sources of finance?
- How much (what percentage) of working capital has been funded using the permanent (long-term) sources of finance?

Self Assessment Questions

1. Flow of funds refers to change in funds or ________________.
2. ____ working capital refers to the firm's investment in current assets.
3. If the firm's current assets are Rs.81,000 and its current liabilities are Rs.35,000, then its working capital is Rs.________
4. Negative working capital occurs when current assets are ______ current liabilities.

9.4 Steps in Analysing Flow of Funds

The analysing of flow of funds involves the following steps:

1. Analysing changes in working capital
2. Computing funds from operations
3. Identifying sources and applications of funds

Let us now discuss the steps in detail.

9.4.1 Analysing changes in working capital

The changes in working capital can be ascertained from the balance sheet, profit and loss account, and from other information.

There will be a flow of funds if a transaction involves the following:

- Current assets and fixed assets, e.g., purchase of building for cash
- Current assets and capital, e.g., issue of shares for cash
- Current assets and fixed liabilities, e.g., redemption of debentures in cash
- Current liabilities and fixed liabilities, e.g., creditors paid off in debentures
- Current liabilities and capital, e.g., creditors paid off in shares
- Current liabilities and fixed assets, e.g., building transferred to creditors in satisfaction of their claims

There will be no flow of funds if a transaction involves the following:

- Current assets and current liabilities, e.g., payment made to creditors through cash
- Fixed assets and fixed liabilities, e.g., building purchased and payments made in debentures
- Fixed assets and capital, e.g., building purchased and payment made in shares

Schedule of changes in working capital

It is the statement prepared for the purpose of noting down the changes in each item of the current asset and the current liability and its contribution to the change in the total working capital.

The effect of the changes in the individual items of the current assets and current liabilities on the working capital is also presented clearly and precisely. The difference in the amount of working capital at the end of two years will depict either the increase or decrease in working capital. While ascertaining the increase or decrease in individual items of current assets and current liabilities and its impact on working capital, the following rules should be taken into account.

Rules for preparing the schedule of changes in working capital

- Increase in current asset, results in increase (+) in "working capital"
- Decrease in current asset, results in decrease (-) in "working capital"
- Increase in current liability, results in decrease (-) in "working capital"
- Decrease in current liability, results in increase (+) in "working capital"

The format of this statement is given below.

Schedule of Changes in Working Capital

For the Year Ending …….

Particulars	Previous Year Rs.	Current Year Rs.	Change in Working Capital	
CURRENT ASSETS			**Increase Rs.**	**Decrease Rs.**
Cash in hand Cash at Bank Sundry Debtors Bills Receivable Stock or Inventory Prepaid expenses Temporary Investments Accrued Incomes				

Total current assets (A)				
CURRENT LIABILITIES				
Sundry Creditors Bills Payable Bank Overdraft Outstanding expenses Income received in advance Provision for Taxation* Proposed Dividends* **Total current liabilities (B)**				
NET WORKING CAPITAL (A)-(B)				
Increase/Decrease in Working Capital (Balancing Figure)				
Total				

***Provision for Taxation: It can be treated in the following two ways:**

1. ***Treated as current liability* –** When there is no income tax paid or additional provision made, it is treated as current liability. It can be taken to schedule of changes in working capital. No further treatment is required.
2. ***Treated as non-current liability* –** A ledger account (provision for taxation a/c) is prepared. Sometimes we may have to arrive at income tax paid during the year from the given information. These are hidden transactions which are not apparent and are hidden.

***Proposed Dividend: It can be treated in the following two ways:**

1. ***Treated as current liability* –** Proposed dividend can be taken as current liability because declaration of dividends by shareholders is simply a formality. It is taken to schedule of changes in working capital with no further treatment.
2. ***Treated as non-current liability* –** Proposed dividend can be taken as an appropriation of profit. In such a case, proposed dividend for the current year will be added back to the current year's profit. This helps in finding funds from operations, if such amount of dividend has already been charged to profit. Payment of dividend will be shown as an application of fund.

Self Assessment Questions

5. When cash is collected from debtors there is flow of funds. (True/False)
6. When there is sale of fixed assets and cash is obtained, there is flow of funds because it involves non-current asset and current asset. (True/False)
7. X Ltd. transfers Rs.10 lakh of its profits to redemption reserve account. Does it involve flow of funds? (Yes/No)
8. Y Ltd. writes off goodwill during the current accounting period. This transaction involves flow of funds. (True/False)
9. A firm accepts bills payable drawn by its creditors. Will this transaction have an effect on the flow of funds? If yes, why?
10. Give one transaction that involves one current liability and one non-current liability.
11. Give one transaction that involves one current liability and one non-current asset.

Activity 1:

Give suitable examples (other than the examples given in the SLM) if there is flow of funds for the following transactions:

1. Current assets and fixed assets, e.g., . …………………..
2. Current assets and capital, e.g., …………………………
3. Current assets and fixed liabilities, e.g., ………………….
4. Current liabilities and fixed liabilities, e.g., ………………
5. Current liabilities and capital, e.g.,……………………….
6. Current liabilities and fixed assets, e.g., …………………………..

9.4.2 Computing funds from operations

Revenue transactions such as depreciation, amortisation, profit or loss on sale of assets, etc. appearing in the profit and loss account does not belong to either current or non-current category. All such non-operating incomes and non-operating expenses appear in adjusted profit and loss account to ascertain the ‘funds from operations’.

Funds from operations – Profit earned by the concern during the current year is deemed to be the source of funds. It is a very important source of funds inflow. Net profit is arrived at by deducting cost of goods sold and other expenses from the total sales revenue. However, the profit calculated

is seldom equal to the funds from operations. This is because there are many items which are debited or credited in the profit and loss account that do not affect working capital. Therefore, in calculating the funds from operations, the following adjustments must be kept in mind:

1. Items to be added back to net profit
2. Non-fund revenue deductions
3. Non-trading charges or losses
4. Items that are to be deducted from net profit
5. Dividend received or receivable
6. Retransfer of excess provisions
7. Profit on sale of non current assets
8. Appreciation in fixed assets

Adjusted Profit and Loss a/c

To		**By**	
Depreciation written off		Balance b/d (Opening balance)	
Preliminary exp written off		Profit on sale of investments	
Goodwill written off		Profit on sale of fixed assets	
Discount on issue of shares		Dividend and interest received	
Loss on sale of fixed assets		**Funds from Operations (balance fig)**	
Loss on sale of trade investments			
Transfer to General Reserve			
Provision for Tax			
Provision for Proposed Dividend			
Balance c/d (Net Profit) Closing balance			
Total		**Total**	

NOTE:

- If debit total of adjusted profit and loss account is more than the credit total, the difference is the funds generated from operation
- If credit total of adjusted profit and loss a/c is more than the debit total, the difference is the funds lost in operations.

9.4.3 Identifying sources and applications of funds

The next step is to identify the sources and applications of funds. Following is the list of transactions that results in a source of fund or application of funds.

Sources of funds (working capital)

- Funds from operations (i.e., adjusted net profit as discussed in the previous section)
- Proceeds of issue of
  - Equity shares
  - Preference shares
- Proceeds of issue of
  - Debentures
  - Bonds
- Raising long-term debts from banks and financial institutions
- Raising mortgage loans (long-term)
- Sale of assets
  - Tangible assets like land, buildings, equipments, machinery, vehicles, etc.
  - Intangible assets like patent rights, copyrights, brand names, goodwill, licences, etc.
- Sale of investments like shares, bonds, debentures, etc.

Applications or uses of funds (working capital)

- Funds lost in operations (adjusted net loss)
- Buy back of equity shares
- Redemption of redeemable preference shares
- Redemption of redeemable bonds or debentures
- Repaying of long-term debts from banks and financial institutions
- Repaying of mortgage loans (long-term)
- Purchasing of assets
  - Tangible assets like land, buildings, equipments, machinery, vehicles, etc.
  - Intangible assets like patent rights, copyrights, brand names, goodwill, licences, etc.
- Purchasing of investments like shares, bonds, debentures, etc.

It may be noted that the sources of funds increase the working capital and applications of funds decrease the working capital.

However, there are certain transactions that do not result in either increase or decrease of funds. Such transactions are termed as non-fund transaction. E.g. if the funds are Rs.10000 and a fixed asset of Rs.5000 is purchased by issuing shares of Rs.5000, the funds position will not change and therefore this transaction will be considered as a non-fund transaction.

9.5 Preparing the Fund Flow Statement

Having arrived at the change in the working capital, funds from operations (or funds lost in operations), identified the sources and applications of funds, the next step is to put them in the form of a summarised statement.

For this purpose, a statement listing the sources of funds and applications of funds is prepared. This statement is called the statement of sources.

Uses of funds or funds flow statement

It is a statement which depicts the sources from which funds are obtained and how they have been utilised. When a transaction results in an increase of funds it is termed as '**source of fund**' and when it results in a decrease of funds it is termed as '**application of fund**'.

If during a year, the source of funds was greater than the applications, then there would be an increase in the working capital and vice versa. This change (increase or decrease) should be equal to the change (increase or decrease) as shown by the statement of changes in the working capital.
The format of a funds flow statement is given below.

Funds Flow Statement
For the Year Ending ……

Sources of funds	**Rs.**	**Applications of funds**	**Rs.**
Funds from operations		Funds lost in operations	
Non-trading incomes		Non-operating expenses	
Issue of Shares		Redemption of Preference shares	
Issue of debentures		Redemption of debentures	
Borrowing of loans		Repayment of loans	

Acceptance of deposits		Repayment of deposits	
Sale of fixed assets		Purchase of fixed assets	
Sale of investments		Purchase of long-term instruments	
Net decrease in working capital		Net increase in working capital	
Total		Total	

9.6 Interpretation of Funds Flow Statement

A sound financial policy requires the long-term assets to be financed using long-term sources (liability) and short-term assets using short-term sources (current liability).

The funds flow statement must be carefully observed to draw conclusions about the appropriateness of the investment and financing decisions and the working capital management of the firm. Broadly, the following points may be observed.

- The increase in the long-term assets should more or less be equal to the increase in the long-term sources (debt or equity). It may then be concluded that long-term assets have been financed using long-term sources, which is a sound financial policy.
- Similarly, the decrease in the long-term assets should more or less equal to the decrease in the long-term sources (debt or equity). It may then be concluded that the long-term assets have been used for paying off the long-term liabilities, which again is a sound financial policy.
- Using fixed assets to pay off current liabilities is not a sound financial policy.
- Similarly, using current liabilities (short-term sources) to finance fixed assets is not a sound financial policy.
- A high level of funds from operations is desirable.
- Funds from operations may be used either to pay off long-term liabilities or for financing fixed assets.

We will illustrate the interpretation in the following examples.

Illustration1: XYZ Ltd. provides the following information

	January 1	December 31
Sundry Debtors	65,000	1,05,000
Cash in hand	13,000	20,000
Cash at Bank	15,000	20,000
Bills Receivable	16,000	30,000
Inventory	90,000	84,000
Bills Payables	12,000	8,000
Outstanding expenses	6,000	5,000
Sundry Creditors	30,000	58,000
Bank Overdraft	30,000	42,000
Short-term Loans	32,000	36,000

Prepare a schedule of changes in working capital

Solution:

Schedule of Changes in Working Capital

Details	Balance as on		Effect of WC	
	Jan 1	Dec 31	Increase	Decrease
Current Assets				
Cash in hand	13,000	20,000	7,000	
Cash at Bank	15,000	20,000	5,000	
Sundry Debtors	65,000	1,05,000	40,000	
Bills Receivable	16,000	30,000	14,000	
Inventory	90,000	84,000	-	6,000
Total Current Assets (A)	**1,99,000**	**2,59,000**		
Current Liabilities				
Sundry Creditors	30,000	58,000	-	28,000
Bills Payables	12,000	8,000	4,000	-
Outstanding expenses	6,000	5,000	1,000	-
Bank Overdraft	30,000	42,000	-	12,000
Short-term loans	32,000	36,000	-	4,000
Total Current Liabilities (B)	**1,10,000**	**1,49,000**		
Working Capital (A) – (B)	89,000	1,10,000		
Net Increase in working capital (balancing figure)	**21,000**			**21,000**
	1,10,000	**1,10,000**	**71,000**	**71,000**

Illustration 2: The following are the summarised balance Sheet of Anderson Ltd. Prepare a funds flow statement.

Balance Sheet As On…….

Liabilities	2006	2007	Asset	2006	2007
Sh Capital	5,00,000	6,00,000	F. Assets	10,00,000	11,20,000
Reserves	1,50,000	1,80,000	Less: Dep	(3,70,000)	(4,60,000)
P & L a/c	40,000	65,000	Stock	2,40,000	3,70,000
Debentures	3,00,000	2,50,000	Book Debts	2,50,000	2,30,000
Creditors	1,70,000	1,60,000	Cash	1,00,000	75,000
Prov. for IT	60,000	80,000			
	12,20,000	13,35,000		12,20,000	13,35,000

Solution:

Statement of Changes in Working Capital

Particulars	2006	2007	Increase	Decrease
Current Asset				
Cash	1,00,000	75,000		
Stock	2,40,000	3,70,000	1,30,000	-
Book Debts	2,50,000	2,30,000	-	20,000
Total CA (A)	**5,90,000**	**6,75,000**		
Current Liabilities				
Creditors for goods	1,70,000	1,60,000	10,000	-
Provision for income tax	60,000	80,000	-	20,000
Total CL (B)	**2,30,000**	**2,40,000**		
Working Capital (A – B)	3,60,000	4,35,000		
Increase in Working capital	75,000	-	-	75,000
Total	**4,35,000**	**4,35,000**	**1,40,000**	**1,40,000**

Adjusted Profit and Loss Account

To		By	
Reserve	30,000	Opening balance	40,000
Depreciation	90,000	Funds from Operation	1.45,000
Closing balance	65,000		
Total	**1,85,000**	**Total**	**1,85,000**

Funds Flow Statement

Sources		**Application**	
Issue of Share Capital	1,00,000	Redemption of debentures	50,000
Funds from Operation	1,45,000	Purchase of Fixed Assets	1,20,000
		Increase in working capital	75,000
	2,45,000		2,45,000

Interpretation

- The company has used sale proceeds of the issue of shares towards redemption of debentures.
- Fixed assets have been financed partly out of the sale proceeds of the issue of shares and partly out of funds from operations.

Hence the financing policy of the company has been good.

Illustration 3: Following is the balance sheet of M/s Srinivas Ltd. Prepare a fund flow statement.

Particulars	2006	2007	Particulars	2006	2007
Equity Share capital	50,000	65,000	Cash balances	10,000	13,000
Profit and Loss	14,750	17,000	Debtors	25,000	27,000
Trade Creditors	29,000	31,000	Investment	5,000	nil
Mortgage	10,000	15,000	Fixed Assets	50,000	80,000
Short-term loans	15,000	16,500	Less: Depreciation	(5,250)	(7000)
Accrued expenses	8,000	7,500	Goodwill	5,000	nil
			Stock	37,000	39,000
Total	**1,26,750**	**1,52,000**	**Total**	**1,26,750**	**1,52,000**

Additional Information:

1. Depreciation provided is Rs.1750.
2. Written off goodwill.
3. Dividend paid is Rs.3500.

Solution:

Schedule of Changes in Working Capital

	Balance as on			
	2006	**2007**	**Increase**	**Decrease**
Current Assets				
Cash	10,000	13,000	3000	
Debtors	25,000	27,000	2000	
Stock	37,000	39,000	2000	
Total C.A (A)	**72,000**	**79,000**		
Current Liabilities				
Trade Creditors	29,000	31,000		2000
Short-term loans	15,000	16,500		1500
Accrued expenses	8,000	7,500	500	
Total C.L (B)	**52,000**	**55,000**		
Working capital **(A – B)**	20,000	24,000		
Net increase in working capital	**4,000**	**-**		**4000**
Total	**24,000**	**24,000**	**7500**	**7500**

Adjusted Profit and Loss Account

To		By	
Depreciation	1,750	Balance b/d	14,750
Goodwill	5,000	Funds generated from operations (Balance figure)	12,500
Dividend	3,500		
Balance c/d	17,000		
TOTAL	**27,250**	**TOTAL**	**27,250**

Funds Flow Statement

Issue of fresh equity	15,000	Purchase of fixed assets	30,000
Sale of investment	5,000	Payments of dividends	3,500
Loan on mortgage	5,000	Increase in working capital	4,000
Funds from operations	12,500		
	37,500		**37,500**

Interpretation

- Fixed assets (Rs.30000) have been financed partly out of sale proceeds of the issue of shares (Rs.15000), partly out of mortgage loan (Rs.5000), partly out of sale of investment (Rs.5000), and the balance (Rs.5000) out of funds from operations. It is a good financing policy.
- Dividends have been financed out of funds from operations. It is a good policy.

Illustration 4: Following is the balance sheet of M/s Mahaveer Enterprise for the year 1996 and 1997.

Balance Sheet as on 31st March 1997

Liabilities	1997	1998
Share Capital	2,00,000	2,50,000
General Reserve	50,000	60,000
Profit and Loss	30,500	30,600
Bank Loan (long-term)	70,000	-
Sundry Creditors	1,50,000	1,35,200
Provision for Taxation	30,000	35,000
Total	**5,30,500**	**5,10,800**
Assets		
Land and Building	2,00,000	1,90,000
Machinery	1,50,000	1,69,000
Stock	1,00,000	74,000
Sundry Debtors	80,000	64,200
Cash	500	600
Bank	-	8,000
Goodwill	-	5,000
Total	**5,30,500**	**5,10,800**

Additional Information: During the year ended 31st December,1998

1. Dividend of Rs.23,000 was paid
2. Assets of another company were purchased for a consideration of Rs.50,000 payable in shares. The assets include stock Rs.20000, machinery Rs.25,000
3. Machinery was further purchased for Rs.8000
4. Depreciation written off on machinery Rs.12,000

5. Income tax provided during the year Rs.33,000
6. Machinery worth Rs.2000 was sold for Rs.1800. Loss on sale of machinery Rs.200 was transferred to general reserve.

Prepare the schedule of changes in working capital and funds flow statement.

Solution:

Schedule of Changes in Working Capital

Particulars	1997	1998	Increase	Decrease
Current Assets				
Stock	1,00,000	74,000		26,000
Sundry Debtors	80,000	64,200		15,800
Cash	500	600	100	
Bank	-	8,000	8,000	
A. Total Current Assets	**1,80,500**	**1,46,800**		
Current Liabilities				
Sundry Creditors	1,50,000	1,35,200	14,800	
B. Total Current Liabilities	**1,50,000**	**1,35,200**		
Working Capital [A – B]	**30,500**	**11,600**		
Decrease in Working capital		**18,900**	18,900	
Total	**30,500**	**30,500**	**41,800**	**41,800**

Land and Building A/c

Particulars	Rs.	Particulars	Rs.
To Op. bal b/d	2,00,000	By Adjusted P & L A/c [Depreciation – Bal. Fig.]	10,000
		By Cl. Balance C/d	1,90,000
	2,00,000		**2,00,000**

Machinery A/c

Particulars	Rs	Particulars	Rs.
To Op. Balance B/d	1,50,000	By Adjusted P & L A/c [Depreciation]	12,000
To Share Capital A/c [Purchase of Shares]	25,000	By Gen. Reserve A/c [Loss on Sale]	200
To Cash A/c [Purchase]	8,000	By Cash A/c [Sale]	1,800
		By Cl. Balance C/d	1,69,000
	1,83,000		**1,83,000**

Goodwill A/c

Particulars	Rs.	Particulars	Rs.
To Op. Balance B/d	–		
To Share Capital A/c (purchase consideration)	5,000	By Cl. Balance C/d	5,000
	5,000		**5,000**

Share Capital A/c

Particulars	Rs.	Particulars	Rs.
To Cl. Balance C/d	2,50,000	By Op. Balance B/d	2,00,000
		By Stock	20,000
		By Machinery A/c	25,000
		By Goodwill A/c (purchase consideration)	5,000
	2,50,000		2,50,000

General Reserve A/c

Particulars	Rs.	Particulars	Rs.
To Machinery A/c	200	By Op. Balance B/d	50,000
To Cl. Balance C/d	60,000	By Adjusted P & L A/c	10,200
	60,200		60,200

Bank Loan A/c

Particulars	Rs	Particulars	Rs.
To Cash A/c [Repayment]	70,000	By Op. Bal b/d	70,000
To Cl. Balance c/d	-		
	70,000		**70,000**

Provision for Tax A/c

Particulars	Rs.	Particulars	Rs.
To Cash A/c [Tax Paid] (balancing figure)	28,000	By Op balance B/d	30,000
To Cl. Balance C/d	35,000	By Adjusted P & L A/c	33,000
	63,000		**63,000**

Adjusted Profit and Loss A/c

Particulars	Rs.	Particulars	Rs.
To Dep - Land and Building.	10,000	By Balance C/d	30,500
To Depreciation on Machinery	12,000	By Funds from Operation [Bal Fig.]	88,300
To Gen. Reserve A/c	10,200		
To Provision for Taxation	33,000		
To Dividend	23,000		
To Balance C/d	30,600		
	1,18,800		**1,18,800**

Funds Flow Statement

Sources	Rs.	Applications	Rs.
Sale of Machinery	1,800	Purchase of Machinery	8,000
Issue of Shares [Purchase of Stock] *	20,000	Payment of Dividend	23,000
Funds from Operation	88,300	Income Tax paid	28,000
Decrease in Working Capital [Balancing Fig.]	18,900	Repayment of Loan	70,000
	1,29,000		**1,29,000**

* Issue of shares, which involves only current assets, has to be considered here.

Interpretation:

- Loan has been repaid out of funds from operations.
- Funds from operations have not been sufficient to meet other commitments like financing the cash purchase of fixed assets and payment of income tax.
- Despite insufficient funds from operations, the company has paid huge dividends. It is not an appropriate policy.

Self Assessment Questions

12. Identify the operating and non-operating incomes or gains from the list given below.
    a. Commission received
    b. Royalties received
    c. Rent received
    d. Sales
    e. Profit on sale of assets
13. Identify the operating and non-operating expenses or losses from the list given below.
    a. Commission paid
    b. Royalties paid
    c. Rent paid
    d. Purchases
    e. Loss on sale of assets
14. Identify the sources and uses of funds from the following set of transactions.
    a. Sale of machinery
    b. Interim dividend paid
    c. Loan instalment paid
    d. Dividends received
    e. Advance tax paid
    f. Loan taken from bank

9.7 Summary

Let us recapitulate the important concepts discussed in this unit:

- Funds flow indicates the sources and applications of working capital during a particular accounting period.
- Statement of sources and uses of funds or funds flow statement is a statement which depicts the sources from which funds are obtained and how they have been utilised. When a transaction results in increase of funds, it is termed as 'source of fund' and when it results in decrease of fund it is termed as 'application of fund'.

- Funds flow statement reveals how the funds were obtained and how they were utilised, whereas the income statement discloses the results of the business activity.

9.8 Glossary

Adjusted P/L account: A memorandum account prepared to compute funds from operations.

Fund: Net working capital.

Flow of fund: Flow of value between current items to non-current items.

9.9 Terminal Questions

1. What is fund flow analysis? What are the objectives of analysing flow of fund?
2. Prepare a statement of changes in working capital from the following information.

Particulars	Jan 1	Dec 31
Share capital	50,000	50,000
Retained earnings	14,000	48,000
Fixed assets at cost	80,000	90,000
Provision for depreciation on fixed assets	22,000	27,000
Investments in shares of subsidiaries	15,000	15,000
Government securities	6,0000	12,000
8% Debentures (redeemable in 5 equal annual instalment of Rs.20,000 each, from the current year	20,000	-
Prepaid expense	21,000	4,000
Outstanding expenses	5,000	12,000
Creditors and bills payables	30,000	25,000
Debtors and bills receivables	18,000	20,000
Cash and bank balances	5,000	13,000
Provision for doubtful debts	4,000	2,000

9.10 Answers

Self Assessment Questions

1. Change in Working Capital
2. Gross

3. Rs.46,000
4. Less than
5. False
6. True
7. No
8. False
9. This transaction will not have any effect on the flow of funds because it involves only current liabilities.
10. Creditors paid off by issue of debentures
11. Building transferred to creditors in satisfaction of their claims.
12. Operating: b, d
    Non Operating: a, c, e
13. Operating: a, c, b, d
    Non Operating: e
14. sources: a, d, f
    Applications; b,c,e

Terminal Questions

1. Refer sections 9.2 and 9.3

Net increase in working capital = 9,000

9.11 Case Study

Sources and Application of Funds

The following is the summarised balance sheet of RD International Ltd. as on 31st March, 2008 and 2009.

You are required to comment on the financial policy of the company and prepare the following:

(i) A statement showing changes in the working capital

(ii) A statement of sources and applications of funds

You can make appropriate assumptions.

Balance Sheets

	2008 Rs.	***2009 Rs.***		***2008 Rs.***	***2009 Rs.***
Capital :			Fixed Assets :	41,000	40,000
7% Redeemable			Less: Depreciation	11,000	15,000
Preference shares		10,000			
Equity Shares	40,000	40,000	Current Assets :	30,000	25,000
General Reserve	2,000	2,000	Debtors	20,000	24,000
Profit and Loss A/c	1,000	1,200	Stock	30,000	35,000
Debentures	6,000	7,000	Prepaid expenses	300	500
Current Liabilities:			Cash	1,200	3,500
Creditors	12,000	11,000			
Provision for taxation	3,000	4,200			
Proposed Dividends	5,000	5,800			
Bank Overdraft	12,500	6,800			
	81,500	88,000		81,500	88,000

Sources: *Raman, B. S. , Management Accounting, United Publishers*

Solution to case study

Statement showing changes in working capital

	Position on 31.3.2008 Rs.	Position on 31.3.2009 Rs.	Increase in working capital or Dr. Rs.	Decrease in working capital Cr. Rs.
Current Assets:				
Debtors				
Stock	20,000	24,000	4,000	
Prepaid expenses	30,000	35,000	5,000	
Cash	300	500	200	
Current Liabilities:	1,200	3,500	2,300	
Creditors				
Provision for taxation	12,000	11,000	1,000	
Proposed dividends	3,000	4,200		1,200
Bank overdraft	5,000	5,800		800
	12,500	6,800	5,700	
Net increase in working capital				
(Balancing figure)			18,200	2,000
				16,200
			18,200	18,200

Note:

Provision for taxation and proposed dividend are treated as current liabilities.

Adjusted Profit and Loss account

(To find out the fund flow from operations)

	Rs.		Rs.
To Depreciation provision made for fixed assetsduring the year (15,000- 11,000)	4,000	By Balance b/d (opening balance of profit and loss account, i.e., profit and loss account balance as on 31.3.2008	1,000
To Balance c/d (closing balance of profit and loss account, i.e., profit and loss account balance as on 31.3.2008)	1,200	Fund flow from operation (Balancing figure)	4,200
Rs.	5,200	Rs.	5,200

Notes:

1. If provision for taxation and propose dividends are treated as current liabilities, the provision for taxation made during the year and the dividend proposed during the year should not be recorded in the adjusted profit and loss account as appropriation of profits.
2. It is assumed that depreciation given in the balance sheet as a deduction from fixed assets is accumulated provision for depreciation.
3. The provision for depreciation made for fixed assets during the year, entered in the adjusted profit and loss account, can be ascertained by preparing the provision for depreciation account.

Provision for Depreciation Account

(To find out the provision for depreciation made during the year)

To Bal c/d	15000	By Bal b/d By P/L a/c (balancing fig)	11000 4000
	15000		15000

Fund Flow Statement

Sources		**Applications**	
Funds from operations Issue of PS Issue of dentures Sale of FA	4200 10000 1000 1000	Net increase in WC	16200
	16200		16200

Assumptions:

1. Assumed that fixed assets appear at cost
2. Assumed that there has not been any accumulated depreciation on the fixed asset sold.
3. Assumed that no profit or loss is made on the fixed asset sold.

Fixed Asset

(to find Fixed Asset sold)

To Bal b/d	41000	By cash a/c (balancing fig) By Bal c/d	1000 40000
	41000		41000

Comments:

- There have not been any appropriations or uses of funds.
- The company has issued preference shares and debentures without actual need for funds. It is not a sound decision as the company incurs cost on funds raised without deploying them and getting returns on them.

References:

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- Khan and Jain, *Management Accounting 4/e,* TMH
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Unit 10 Cash Flow Analysis

Structure:

10.1 Introduction
Objectives
10.2 Meaning of Cash Flow Analysis
10.3 Objectives of Cash Flow Analysis
10.4 Preparation of Cash Flow Statement
10.5 Format of Cash Flow Statement (AS3: Revised Method)
10.6 Cash Flow from Operating Activities
10.7 Differences Between Cash Flow Analysis and Fund Flow Analysis
10.8 Summary
10.9 Glossary
10.10 Terminal Questions
10.11 Answers
10.12 Case Study

10.1 Introduction

In the previous unit we learnt about fund flow analysis with the help of fund flow statement. We also analysed the objectives and the steps involved in analysing flow of funds. Cash is the most likeable asset and aspect in our daily lives. We all like to receive cash and also hold favourable cash balances. At the same time, it is also an asset that can be most easily misappropriated. Hence, it is important for a company to give a complete explanation of the sources of cash and the ways in which cash was applied during the year. This is the reason why the accounting standard on cash flow analysis - AS3 has been made mandatory. It requires that every company must give a statement of the sources of cash and applications of cash along with the financial statements. In this unit, we shall understand in detail how to make cash flow analysis and how to present it.

Objectives:

After studying this unit, you should be able to:

- explain the meaning of cash flow analysis
- analyse the objectives of cash flow analysis

- prepare cash flow statement as per accounting standard 3 using direct method and indirect method
- interpret the cash flow statement and comment on the appropriateness of investing and financing decisions
- distinguish between cash flow analysis and funds flow analysis

10.2 Meaning of Cash Flow Analysis

Cash flow analysis is an important tool of financial analysis. It is the process of understanding the change in position with respect to cash in the current year and the reasons responsible for such a change. Incidentally, the analysis also helps us to understand whether the investing and financing decision taken by the company during the year are appropriate are not.

Cash flow analysis is presented in the form of a statement. Such a statement is called a cash flow statement.

10.3 Objectives of Cash Flow Analysis

Cash flow analysis is done with the objective of understanding some of the following important questions:

- What is the change in the cash position of the firm for the current year as compared to the previous year?
- How good was the liquidity position of the firm?
- What were the sources of cash during the current year?
- How much cash was generated from operations?
- What were the applications of cash during the current year?
- How much cash was spent on investment activities, such as purchase of new plant and machinery, purchase of land?

10.4 Preparation of Cash Flow Statement

The preparation of cash flow statement is similar to the preparation of fund flow statement. It requires the identification of the sources of cash and the uses of cash.

A source of cash is a transaction which brings an inflow of cash. An application of cash is a transaction which leads to an outflow of cash.

Following is the list of transactions that results in a source of cash or application of cash.

Sources of cash:

- Cash from operations
- Proceeds of issue of
  - Equity shares
  - Preference shares
- Proceeds of issue of
  - Debentures
  - Bonds
- Raising long-term debts from banks and financial institutions
- Raising mortgage loans (long-term)
- Sale of assets
  - Tangible assets like land, buildings, equipments, machinery, vehicles, etc.
  - Intangible assets like patent rights, copyrights, brand names, goodwill, licences, etc.
- Sale of investments like shares, bonds, debentures, etc.

Applications or uses of cash:

- Cash lost in operations (adjusted net loss)
- Buy back of equity shares
- Redemption of redeemable preference shares
- Redemption of redeemable bonds or debentures
- Repaying of long-term debts from banks and financial institutions
- Repaying of mortgage loans (long-term)
- Purchasing of assets
  - Tangible assets like land, buildings, equipments, machinery, vehicles, etc.
  - Intangible assets like patent rights, copyrights, brand names, goodwill, licences, etc.
- Purchasing of investments like shares, bonds, debentures, etc.

It may be noted that the sources of cash increase the cash balance and applications of cash decrease the cash balance.

10.5 Format of Cash Flow Statement (AS3: Revised Method)

The format of a cash flow statement is given below. Accounting Standard 3 (AS3) - cash flow statement

The Institute of Chartered Accountants of India has issued AS3 on cash flow statement. AS3 is now mandatory. It is applicable to every company listed on a stock exchange with a turnover of Rs.50 crore or more. It is mandatory for such companies to prepare a cash flow statement every year and present it along with financial statements (profit and loss account and balance sheet). Therefore, it is important for us to understand the important definitions and provisions of the Standard.

The important paragraphs from AS3 are reproduced below.

Cash comprises cash on hand and demand deposits with banks.

Cash equivalents are short term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value.

Cash flows are inflows and outflows of cash and cash equivalents.

Operating activities are the principal revenue-producing activities of the enterprise and other activities that are not investing or financing activities.

Investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents.

Financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital in the case of a company) and borrowings of the enterprise.

Examples of cash flows from Operating activities are:

a) cash receipts from the sale of goods and the rendering of services;
b) cash receipts from royalties, fees, commissions and other revenue;
c) cash payments to suppliers for goods and services;
d) cash payments to and on behalf of employees;
e) cash receipts and cash payments of an insurance enterprise for premiums and claims, annuities and other policy benefits;
f) cash payments or refunds of income taxes unless they can be specifically identified with financing and investing activities; and

g) cash receipts and payments relating to futures contracts, forward contracts, option contracts and swap contracts when the contracts are held for dealing or trading purposes.

Examples of cash flows arising from Investing activities are:

a) cash payments to acquire fixed assets (including intangibles). These payments include those relating to capitalised research and development costs and self-constructed fixed assets;
b) cash receipts from disposal of fixed assets (including intangibles);
c) cash payments to acquire shares, warrants or debt instruments of other enterprises and interests in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes);
d) cash receipts from disposal of shares, warrants or debt instruments of other enterprises and interests in joint ventures (other than receipts from those instruments considered to be cash equivalents and those held for dealing or trading purposes);
e) cash advances and loans made to third parties (other than advances and loans made by a financial enterprise);
f) cash receipts from the repayment of advances and loans made to third parties (other than advances and loans of a financial enterprise);
g) cash payments for futures contracts, forward contracts, option contracts and swap contracts except when the contracts are held for dealing or trading purposes, or the payments are classified as financing activities; and
h) cash receipts from futures contracts, forward contracts, option contracts and swap contracts except when the contracts are held for dealing or trading purposes, or the receipts are classified as financing activities.

Examples of cash flows arising from Financing activities are:

a) cash proceeds from issuing shares or other similar instruments;
b) cash proceeds from issuing debentures, loans, notes, bonds, and other short or long-term borrowings; and
c) cash repayments of amounts borrowed.

Cash flows from operating activities can be found out by

a) *the direct method, whereby major classes of gross cash receipts and gross cash payments are disclosed; or*

b) *the indirect method, whereby net profit or loss is adjusted for the effects of transactions of a non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments, and items of income or expense associated with investing or financing cash flows.*

(Source: Institute of Chartered Accountants of India www.icai.org)

Cash Flow Statement (Indirect Method) for the year ending on……

1. Cash flow from operating activities Net profit before taxation and extraordinary items: Adjustments for • Depreciation • Foreign exchange loss • Interest income • Dividend income • Interest expenses **Operating profit before working capital changes**		
(+) Decrease/(-)Increase in Sundry Debtors		
(+) Decrease/(-)Increase in Inventories		
(-) Decrease/(+)Increase in Sundry Creditors		
Cash generated from operations		
Income tax paid		
Cash flow from extraordinary items		
Proceeds from earthquake disaster settlement		
Net cash flow from operating activities (i)		
Cash flow from investing activities		
Purchase of fixed assets		
Proceeds from sale of equipment		
Interest received		
Dividends received		
Net cash flow from investing activities (ii)		

Cash flow from financing activities		
Proceeds from issuance of share capital		
Proceeds from long-term borrowings		
Repayment of long-term loans		
Interest paid		
Dividends paid		
Net cash used in financing activities (iii)		
Net increase in cash and cash equivalent (i)+(ii)+(iii)		
(+)Cash and cash equivalents at the beginning of the period		
= Cash and cash equivalents at the end of the period		

The closing balance of cash and cash equivalent should tally with the cash and bank balance of the balance sheet.

10.6 Cash Flow from Operating Activities

While the cash flow from investing and financing activities can be directly assessed, cash flow from operating activities needs to be computed as it is not directly available.

As provided in the Standard, the cash flow arising from operating activities can be computed using direct method or indirect method.

Direct Method

Under this method, the major classes of gross cash receipts are added. From this, the total of major classes of gross cash payments is deducted. The balance is taken as the net cash flow from operating activities.

The format is given below.

Particulars	Rs.
Sales +Royalties +Other operating incomes (if any)	
Total cash receipts (A)	
Less: Production OHs Administrative OHs Selling and distribution OHs Other operating expenses (if any)	
Total cash payments (B)	
Net cash flow from operating activates (A)-(B)	

Indirect Method

Under this method, the net profit shown in the profit and loss account has to be adjusted for non-cash items to find out the operating profit before the working capital changes. Some of these items are as follows:

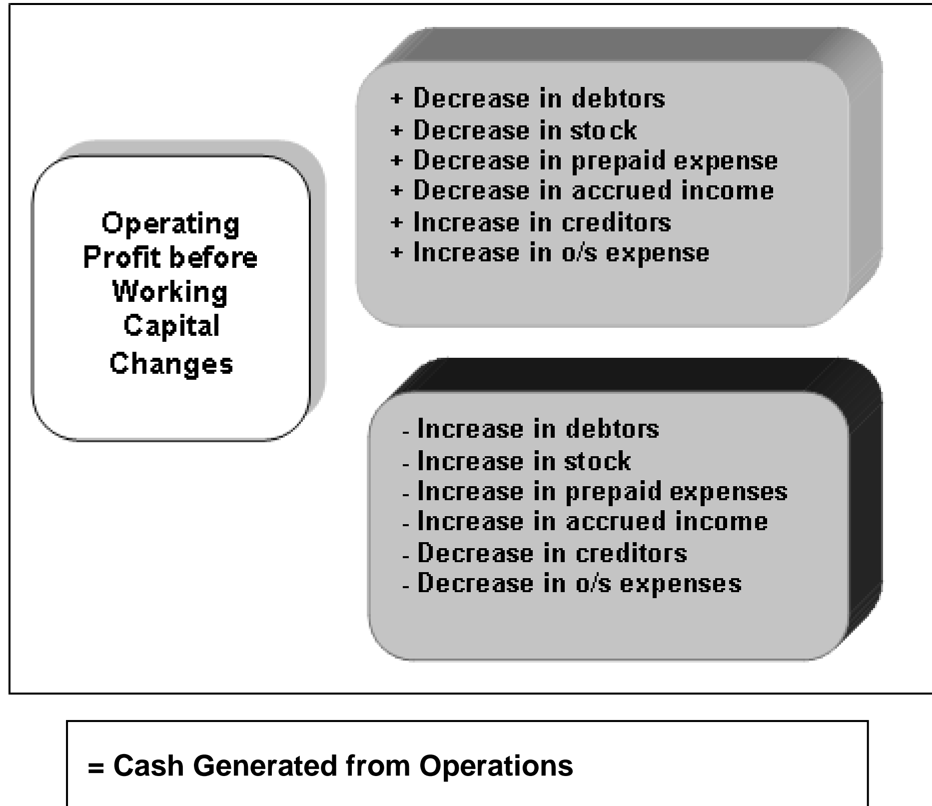
i. Depreciation
ii. Amortisation of intangible assets like goodwill, preliminary expenses, etc.
iii. Loss on sale of fixed assets
iv. Gains from sale of fixed assets
v. Creation of reserves **like reserves for bad debts, general reserve, etc.**

Cash generated from operations

To find the cash from operations, adjustments will have to be made for 'changes' in current assets and current liabilities arising on the account of operations.

- Any decrease in current assets or any increase in current liabilities between two periods should be added back to the operating profit before the working capital changes.
- Likewise, any increase in current assets or any decrease in current liabilities should be deducted from the operating profit before the working capital changes to arrive at the cash generated from operations.

Figure 10.1 depicts the operating profit before the working capital changes.



= Cash Generated from Operations

Figure 10.1: Operating Profit Before Working Capital Changes

Computation of net cash flow from operating activities

Through cash generated from operations, income tax paid and cash flow from extraordinary items (if any) should be adjusted (subtracted) to arrive at net cash flow from operating activities.

Computation of net increase in cash and cash equivalent

The net cash flow from operating, investing, and financing activities is added to arrive at net increase in cash and cash equivalent. To this, cash and cash equivalent at the beginning of the period are added to get cash and cash equivalent at the end of the period.

Self Assessment Questions

1. Preparation and submission of cash flow statement is mandatory according to _______________.
2. Cash flow statement has three sub divisions- __________________, __________________________, and ________________________.
3. Since depreciation, a component of internal source does not result in outflow of cash; the depreciation amount is _______ to the net profit.
4. Give any three internal sources of cash that do not result in outflow of cash.
5. Decrease in liability denotes _____________ of cash.
6. Purchase of plant and machinery on deferred payment basis is shown separately as a source of cash or _________________.
7. Income tax paid is ___________activity. (operating/investing/financing).
8. Purchase of fixed assets is cash flow from _______________ activity. (financing/ investing).
9. Repayment of long-term loans and dividend paid is ______________ activity (financing/investing).
10. Net increase in cash and cash equivalent + _____________________ = cash and cash equivalent at the end of the period.
11. Decrease in sundry debtors should be __________ to operating profit before working capital changes.
12. Increase in sundry creditors should be __________ to operating profit before working capital changes.

Let us now look at some illustrations to understand the cash flow computations and analysis.

Illustration 1: Compute cash flow from operating activities from the profit and loss account and the balance sheet given below.

Profit and Loss Account

To		By	
Cost of goods sold	4,00,000	Sales including cash sales 1,00,000	5,00,000
Office expenses	12,000	Profit on sale of land	30,000
Depreciation	6,000		
Loss on sale of plant	4,000		
Goodwill written off	3,000		
Income tax	7,000		
Net profit	1,10,000		
	5,50,000		5,50,000

Balance Sheet as on ……….

	MARCH 31	
	2006	**2007**
Stock	30,000	28,000
Debtors	15,000	12,000
Bills receivable	6,000	8,000
Creditors	10,000	12,000
Bills payable	8,000	5,000
Outstanding expenses	4,000	5,000

Solution:

Statement showing cash flow from operating activities

Net Profit before tax and extraordinary items		**1,10,000**
Add : income tax	7,000	
Adjustments for Depreciation	6,000	
Goodwill written off	3,000	
Loss on sale of plant	4,000	
		1,30,000
Less: Profit on sale of land	30,000	
Interest received	20,000	(50,000)

Operating profit before working capital changes		80,000
Add : Decrease in current assets		
Stock	2,000	
Debtors	3,000	
Increase in current liabilities : Creditors	2,000	
Outstanding expenses	1,000	8,000
Less :Increase in current assets : Bills Receivable	2.000	
Decrease in current liabilities : Bills payable	3,000	(5,000)
Cash generated from operating activities		**83,000**
Less : Payment of income tax		(7000)
Net Cash from operating Activities		**76,000**

Illustration 2: Following is the balance sheet for the period ending 31st March 2006 and 2007. If the current year's net loss is Rs.38,000, calculate the cash flow from operating activities.

	31st MARCH	
	2006	**2007**
Short-term loan to employees	15,000	18,000
Creditors	30,000	8,000
Provision for doubtful debts	1,200	-
Bills payable	18,000	20,000
Stock in trade	15,000	13,000
Bills receivable	10,000	22,000
Prepaid expenses	800	600
Outstanding expenses	300	500

Solution:

Statement Showing Cash Flow from Operating Activities

Net Loss		**(38,000)**
Add: Decrease in current assets		
Decrease in stock	2,000	
Decrease in prepaid expenses	200	
Increase in current liabilities		
Increase in outstanding expenses	200	
Increase in bills payable	2,000	+ 4,400
		(33,600)

Less: Increase in current assets		
Increase in short-term loan to the employees	3,000	
Increase in bills receivable	10,000	
Decrease in creditors	22,000	
Decrease in provision for doubtful debts	1,200	(36,200)
Net cash lost in operating activities		**(69,800)**

Illustration 3: Following is the balance sheet of Amit and Bros. for the year **ending 31st March** 2006 and 2007. You are required to prepare cash flow statement using indirect method.

Balance Sheet as on 31st March, 2006 and 2007

Liabilities	**2006**	**2007**
Share capital	2,00,000	2,50,000
General reserve	50,000	60,000
Profit and loss	30,500	30,600
Bank loan (long-term)	70,000	-
Sundry creditors	1,50,000	1,35,200
Provision for taxation	30,000	35,000
Total	**5,30,500**	**5,10,800**
Assets		
Land and building	2,00,000	1,90,000
Machinery	1,50,000	1,69,000
Stock	1,00,000	74,000
Sundry debtors	80,000	64,200
Cash	500	600
Bank	-	8,000
Goodwill	-	5,000
Total	**5,30,500**	**5,10,800**

Additional Information:

During the year ended 31st December, 2007

1. Dividend of Rs. 23,000 was paid
2. Assets of another company were purchased for a consideration of Rs. 50,000 payable in shares. The assets include Stock Rs. 20000, Machinery Rs. 25,000
3. Machinery was further purchased for Rs. 8000

4. Depreciation written off on machinery Rs. 12,000
5. Income tax provided during the year Rs. 33,000
6. Machinery worth Rs. 2000 was sold for Rs. 1800. Loss on sale of machinery Rs. 200 was transferred to general reserve.

Solution:

Cash Flow Statement

for the year ending 31st December, 2007

(Indirect Method)

1. Cash flow from operating activities		
Net profit during the year 100 Add: Provision for taxation 33,000 transfer to general reserve 10,200 dividend paid 23,000	66,300	
Add: Depreciation on machinery	12,000	
Add: Depreciation on building	10,000	
Operating profit before working capital changes	**88,300**	
Add: Decrease in stock	46,000	
Add: Decrease in debtors	15,800	
Less: Decrease in creditors	(14,800)	
Less: Income tax paid during the year	(28,000)	
Net cash flow from operating activities		**1,07,300**
II. Cash flow from investing activities:		
Sale of machinery	1,800	
Purchase of machinery	(8000)	
Net cash flow from investing activities		**(6,200)**
III. Cash flow from financing activities		
Mortgage loan repaid	(70,000)	
Dividend paid	(23,000)	
Net cash flow from financing activities		**(93,000)**
Net Increase in cash and cash equivalents		**8,100**
Cash and cash equivalents at the beginning		**500**
Cash and cash equivalents at the end of the period		**8,600**

Comment:

There has been a net cash outflow (Rs. 93,000) on account of financing activities, which is the repayment of mortgage loan. From the statement, it is obvious that this repayment of loan has been funded from the net cash inflows from operating activities (Rs.1,07,300). This is a good way of funding repayment of loans.

Working Notes:

Land and Building A/c

Particulars	Rs.	Particulars	Rs.
To Op. bal b/d	2,00,000	By Adjusted P & L A/c [Depreciation – Bal. Fig.]	10,000
		By Cl. Balance C/d	1,90,000
	2,00,000		**2,00,000**

Machinery A/c

Particulars	Rs	Particulars	Rs.
To Op. Balance B/d	1,50,000	By Adjusted P & L A/c [Depreciation]	12,000
To Share Capital A/c [Purchase of Shares]	25,000	By Gen. Reserve A/c [Loss on Sale]	200
To Cash A/c [Purchase]	8,000	By Cash A/c [Sale]	1,800
		By Cl. Balance C/d	1,69,000
	1,83,000		**1,83,000**

Goodwill A/c

Particulars	Rs.	Particulars	Rs.
To Op. Balance B/d	-	By Cl. Balance C/d	5,000
To Share Capital A/c	5,000		
	5,000		**5,000**

Share Capital A/c

Particulars	Rs.	Particulars	Rs.
To Cl. Balance C/d	2,50,000	By Op. Balance B/d	2,00,000
		By Stock	20,000
		By Machinery A/c	25,000
		By Goodwill A/c	5,000
	2,50,000		2,50,000

General Reserve A/c

Particulars	Rs.	Particulars	Rs.
To Machinery A/c	200	By Op. Balance B/d	50,000
To Cl. Balance C/d	60,000	By Adjusted P & L A/c	10,200
	60,200		60,200

Bank Loan A/c

Particulars	Rs	Particulars	Rs.
To Cash A/c [Repayment] [Trf. to Fund Flow Stnt.]	70,000	By Op. Bal b/d	70,000
To Cl. Balance c/d	-		
	70,000		**70,000**

Provision for Tax A/c

Particulars	Rs.	Particulars	Rs.
To Cash A/c [I - Tax Paid]	28,000	By Op. Balance B/d	30,000
To Cl. Balance C/d	35,000	By Adjusted P & LA/c Balancing Fig.]	33,000
	63,000		**63,000**

Adjusted Profit and Loss A/c

Particulars	Rs.	Particulars	Rs.
To Depreciation on Land and Building.	10,000	By Balance C/d	30,500
To Depreciation on Machinery	12,000	By Funds from Operation [Balancing Fig.]	88,300
To Gen. Reserve A/c	10,200		
To Provision for Taxation	33,000		
To Dividend	23,000		
To Balance C/d	30,600		
	1,18,800		**1,18,800**

Self Assessment Questions

13. Dividend received is _____________ activity because income is received from investment in shares of another company.
14. Dividend paid is ______________ activity.

Activity 1:

State whether the following cash flows are Operating, Investing, or Financing.

1. Cash paid for purchase of machinery.
2. Payment of loan instalment.
3. Cash receipts from the sale of goods and rendering of services.
4. Sale of patent rights.
5. Cash payments to trade creditors.
6. Proceeds of debenture issue.
7. Copyrights purchased.
8. Tax on profit paid.
9. Customs duty paid for importing machinery.
10. Purchase of shares or debentures of other enterprises.
11. Advances and loans made to third parties by a non-financial enterprise.
12. Cash receipts from the repayment of advances and loans of a financial enterprise.
13. Shares bought by RD ltd.
14. Shares bought by Mr. Rangadas, a stock broker.
15. Redemption of preference shares.
16. Purchase of interests in joint ventures.
17. Advances and loans made to third parties by a financial enterprise.

Activity 1: Solution

Operating:3,5,8,12,14,17,

Investing: 1,4,7,9,10,11,13,16

Financing:2,6,15

10.7 Difference Between Cash Flow Analysis and Fund Flow Analysis

Table 10.1 shows the differences between cash flow analysis and fund flow analysis.

Table 10.1: Difference Between Cash Flow Analysis and Fund Flow Analysis

Cash Flow Analysis	Fund Flow Analysis
1. It is concerned only with the change in cash position	1. It is concerned with change in working capital position between two balance sheet dates.
2. It is merely a record of cash receipts and disbursements	2. Net effect of receipts and disbursements are recorded.
3. Cash is part of working capital and therefore an improvement in cash position results in improvement in the funds position	3. An improvement in funds positions need not result in improvement in cash position
4. It is cash based	4. It is accrual based

10.8 Summary

Let us recapitulate the important concepts discussed in this unit:

- Cash flow statement shows the movement of cash and their causes. According to Accounting Standard 3, it is mandatory to prepare and present cash flow statements along with the statement of financial position and statement of income position at the end of the accounting period.It may be prepared using the direct method or the indirect method.
- Under direct method, major gross cash receipts are added. From this, the major gross cash payments are deducted to arrive at the cash flow from operating activates.
- Under indirect method, non-operating and non-cash debits to P/L are added back to net profit to arrive at the cash flow from operating activates.

10.9 Glossary

Financing activities: Activities that result in changes in the size and composition of the owners' capital.

Investing activities: Acquisition and disposal of long-term assets and other investments not included in cash equivalents.

Operating activities: Principal revenue producing activities of the enterprise.

10.10 Terminal Questions

1. What is cash flow statement and how is the cash flow statement subdivided?
2. Bring out the draft format of cash flow statement as per AS3 (revised) method?
3. What is cash flow from operating activities?
4. Bring out the difference between cash flow analysis and fund flow analysis.
5. From the following balance sheets of Joy Ltd., prepare a cash flow statement under indirect method.

Liabilities	**2005**	**2006**
Equity share capital	3,00,000	4,00,000
8% redeemable pref. share capital	1,50,000	1,00,000
General reserve	40,000	70,000
Profit and loss	30,000	48,000
Proposed dividend	42,000	50,000
Sundry creditors	55,000	83,000
Bills payable	20,000	16,000
Provision for taxation	40,000	50,000
Total	**6,77,000**	**8,17,000**
Assets		
Goodwill	1,15,000	90,000
Land and building	2,00,000	1,70,000
Plant	80,000	2,00,000
Sundry debtors	1,60,000	2,00,000
Stock	77,000	1,09,000
Bills receivable	20,000	30,000
Cash	15,000	10,000
Bank	10,000	8,000
Total	**6,77,000**	**8,17,000**

Additional Information

a) Depreciation of Rs.10,000 and Rs.20,000 has been changed on plant and building during the current year.
b) An interim dividend of Rs.20,000 has been paid during the current year.
c) Rs.35,000 was paid during the current year for income tax.

10.11 Answers

Self Assessment Questions

1. AS3
2. a. Net cash flow from operating activities
   b. Net cash flow from investment activities
   c. Net cash flow from financing activities
3. Added back
4. Depreciation, amortisation of intangible assets, gains from sale of fixed assets
5. Outflow
6. Deferred credit
7. Operating
8. Investing
9. Financing
10. Cash and cash equivalent at the beginning of the year
11. Added
12. Added
13. Investment
14. Financing

Terminal Questions

1. Cash flow analysis is presented in the form of a statement. Such a statement is called a cash flow statement. Refer to unit 10.2 and 10.5
2. The Institute of Chartered Accountants of India has issued AS3 on cash flow statement. Refer to unit 10.5
3. The cash flow arising from operating activities can be computed using direct method or indirect method. Refer to unit 10.6
4. Refer to unit 10.7 for differences between cash flow analysis and fund flow analysis.

5. Cash flow from operating activities Rs.1,25,000; Cash flow from investing activities (Rs.1,20,000); Cash flow from financing activities (Rs.12,000).

10.12 Case Study

Cash Flow Statement

Western Telecommunication Company's profit and loss account for the year ended 31st January, 2008 and balance sheet on 31st January, 2007 and 2008 are as follows:

Western Telecommunitcation Company: Profit and Loss Account,

For the year ended 31st January, 2008

		Rs.
Sales Interest income Gain on sale of investments		570,000 2,000 7,000
Cost of goods sold Depreciation expense Selling and administrative expenses Interest expense Loss on sale of plant and machinery	445,000 89,000 46,000 14,000 3,000	
Profit before income tax and extraordinary item Income tax		(18,000) 0
Profit before extraordinary item Extraordinary item Insurance proceeds from earthquake loss claim		(18,000) 0
Net profit		(18,000)

Western Telecomminication Company
Balance sheet, 31st January

	2008	2007
Sources of funds		
Shareholders' funds	Rs.	Rs.
Equity share capital	155,000	85,000
Profit and loss account	102,000	120,000
Total shareholders' funds	257,000	205,000
Loan funds		
Secured loans	97,000	57,000
Unsecured loans	181,000	191,000
Total loan funds	278,000	248,000
Current liabilities		
Bills payable	6,000	9,000
Creditors	24,000	178,000
Income tax payable	9,000	17,000
Total current liabilities	39,000	2,04,000
	574,000	657,000
Application of Funds		
	Rs	Rs
Fixed assets	720,000	540,000
Plant and machinery cost	362,000	305,000
Less: accumulated depreciation, plant and	358,000	235,000
machinery	18,000	66,000
Fixed assets, net		
Investments		119,000
Current assets	151,000	
Inventories	29,000	166,000
Debtors (less provision for doubtful debts Rs.8,000	6,000	2,000
and Rs.12,000)	12,000	69,000
Prepaid expenses	198,000	356,000
Cash and cash equivalents		
Total current assets	574,000	657,000

Additional information:

1. Purchased machinery costing Rs.150,000 with cash.
2. Sold machinery with cost of Rs.45,000 and accumulated depreciation of Rs.32,000 for Rs.10,000.
3. Purchased investment for Rs.30,000.
4. Sold investments costing Rs.78,000 for Rs.85,000
5. Purchased machinery for Rs.75,000 in exchange for secured debentures.
6. Issued at par shares for Rs.50,000.
7. Convert secured debentures of Rs.20,000 to equity shares of Rs.10 par.
8. Repaid unsecured loans of Rs.10,000.
9. Redeemed secured debentures of Rs.15,000 at par.
10. Wrote off Rs.14,000 of debtors when a customer became insolvent and provided Rs.10,000 for doubtful debts, included in selling and administrative expenses.

Discussion Questions:

1. Prepare the cash flow statement according to the direct method.
2. Prepare the cash flow statement according to the indirect method.
3. Clearly mention the disclosures required.

Source: Narayanaswamy, R., Financial Accounting, A Managerial Perspective 3/e, by PHI

Solution to Case study

1. Cash flow statement – Direct method

Western Telecomminication Company:
Cash Flow Statement for the year ended 31st January, 2008

Cash flow from operating activities		
Cash received from customers (i)	Rs.697,000	
Cash paid to suppliers and employees (ii)	(674,000)	
Cash generated from operations	23,000	
Income tax paid (iii)	(8,000)	
Cash flow before extraordinary item	15,000	
Extraordinary item	0	
Net cash provided by operating activities		Rs 15,000

Cash flow from investing activities		
Purchase of plant and machinery	Rs.(150,000)	
Proceeds from sale of plant and machinery	10,000	
Purchase of investment	(30,000)	
Proceeds from sale of investments	85,000	
Interest received	2,000	
Net cash provided by investing activities		(83,000)
Cash flow from financing activities		
Proceeds from issuance of share capital	Rs. 50,000	
Repayments of unsecured loan	(10,000)	
Redemption of secured debentures	(15,000)	
Interest paid	(14,000)	
Net cash provided by financing activities		11,000
Net decrease in cash and cash equivalents		(57,000)
Cash and cash equivalents at the beginning of period		69,000
Cash and cash equivalents at the end of period		12,000

The following is a supplemental schedule of non-cash investing and financing activities.

1. The company purchased machinery for Rs.75,000 in exchange for secured debentures.
2. The company converted secured debentures of Rs.20,000 into equity shares of Rs.10 at par.

Disclosure of Accounting Policy

For purposes of the cash flow statement, the company considers all highly liquid debt instruments purchased with a maturity of three months or less from the date of acquisition to be cash equivalents.

Notes:

(i) (570,000 + 178,000 – 37,000 – 14,000)

(ii) (445,000 + 46,000 – 119,000 – 2,000 + 9,000 + 178,000 + 151,000 + 6,000 – 6,000 – 24,000 – 10,000)

(iii) (17,000 – 9,000)

2. Cash flow statement – Indirect method

Western Telecommunication Company:

Cash Flow Statement for the year ended 31st January, 2008

Cash flow from operating activities	Rs.	
Net profit before income tax and extraordinary item	(18,000)	
Adjustments to reconcile net profit to net cash flow from operating activities		
Depreciation	89,000	
Provision for doubtful debts	10,000	
Loss on sale of plant and machinery	3,000	
Gain on sale of investments	(7,000)	
Interest expense	14,000	
Interest income	(2,000)	
Operating profit before working capital changes	89,000	
Decrease in debtors (including bad debts written off)	127,000	
Increase in inventories	(32,000)	
Increase in prepaid expenses	(4,000)	
Decrease in bills payable	(3,000)	
Decrease in creditors	(154,000)	
Cash generated from operations	23,000	
Income tax paid	(8,000)	
Cash flow before extraordinary item	15,000	
Extraordinary item:		
Proceeds from earthquake insurance claim	0	Rs
Net cash provided by operating activities		15,000
Cash flow from investing activities	Rs	
Purchase of plant and machinery	(150,000)	
Proceeds from sale of plant and machinery	10,000	
Purchase of investments	(30,000)	
Proceeds from sale of investments	85,000	
Interest received	2,000	
Net cash provided by investing activities		(83,000)
Cash flow from financing activities	Rs	
Proceeds from issuance of share capital	50,000	
Repayment of unsecured loan	(10,000)	
Redemption of secured debentures	(15,000)	
Interest paid	(14,000)	
Net cash provided by financing activities		11,000
Net decrease in cash and cash equivalents		(57,000)
Cash and cash equivalents at the beginning of period		69,000
Cash and cash equivalents at the end of period		12,000

The following is a supplemental schedule of non–cash investing and financing activities.

1. The company purchased machinery for Rs.75,000 in exchange for secured debentures.
2. The company converted secured debentures of Rs.20,000 to equity shares of Rs.10 at par.

Disclosure of Accounting Policy

For purposes of the cash flow statement, the company considers all highly liquid debt instruments purchased with a maturity of three months or less from the date of acquisition to be cash equivalents.

References:

- Narayanaswamy R., *Financial Accounting*, *A Managerial Perspective 3/e,* by PHI
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- www.icai.org – retrieved on 24th December 2011

Unit 11 Understanding Cost

Structure:

11.1 Introduction
  Objectives
11.2 Meaning of Cost
11.3 Objectives of Costing
11.4 Methods of Costing
11.5 Techniques of Costing
11.6 Classification of Cost
11.7 Elements of Cost
11.8 Statement of Cost
11.9 Solved Problems
11.10 Summary
11.11 Glossary
11.12 Terminal Questions
11.13 Answers
11.14 Case Study

11.1 Introduction

In unit 7, we learnt that the management needs more detailed information than the external users. Most of such information relates to the cost. In this unit, we shall understand the basic concepts of cost and in the remaining units we shall learn how cost information is useful to the management in decision making and controlling.

Objectives:

After studying this unit, you should be able to:

- explain the meaning of cost
- analyse the objectives of costing
- describe the methods of costing
- explain the techniques of costing
- analyse the various classifications of cost
- assess the elements of cost
- prepare the statement of cost

11.2 Meaning of Cost

Cost is the amount of resources given up in exchange for some goods and services. CIMA defines the term cost as "the amount of expenditure (actual or notional) incurred on or attributable to a given thing". The given thing may be considered as a product, service, or any other activity.

11.3 Objectives of Costing

Costing aims to serve the informational needs of the management for planning, controlling, and decision making.

- It helps to determine the product cost. It is important in valuating inventory and taking decisions regarding pricing of the product.
- It facilitates planning and controlling of operating activities.
- It supplies information for short-term and long-term decisions.

11.4 Methods of Costing

Costing refers to the techniques and processes of determining costs of a product manufactured or a service rendered. The method of costing depends on the nature of product, production method, and specific business conditions.

The different methods of costing are:

A. Job Costing	**B. Process Costing**
(i) Batch Costing	(i) Unit Costing
(ii) Contract Costing	(ii) Operating Costing
(iii) Composite Costing	(iii) Operation Costing

Let us discuss the two methods in detail.

Job costing

It is used in those business concerns where production is carried out as per specific order and customer's specification.

Batch costing	This method is used to determine the cost of a group of identical products. The batch that consists of similar products is a unit and not a single item within the batch.	**E.g.,** production of tablets, capsules, nuts and bolts, components or spare parts

Contract costing	This method is based on the principle of job costing used by house builders and civil contractors. The contract becomes the cost unit for which relevant costs are determined.	E.g., construction of an apartment, housing colony, airports, flyovers, etc.
Composite costing	This method is used to accumulate costs for different components of the product and then combine them because the nature of the product is complex.	E.g., manufacturing of aeroplanes, motor vehicles, computers, etc.

Process costing

It is used in those industries where manufacturing is done continuously and hence it is difficult to trace the cost of specific units. The total cost is averaged for the number of units manufactured.

Unit costing	This method is used when a single item is produced and the final product is composed of homogeneous units. The cost per unit is obtained by dividing the total cost by the total number of units manufactured.	E.g., sugar industry, cement, fertilizer, chemicals, petroleum refining, LPG, paper, etc.
Operating costing	This method is used by service industries. The unit cost differs for these services depending upon the nature of service being rendered.	E.g., passenger mile, bed in a hospital, per student in a college.
Operation costing	This product costing is used when conversion activities are very similar across product lines but the direct materials differ significantly.	E.g., the professional basketballs are covered with genuine leather whereas the scholastic basketballs are covered with imitation leather.

Cost centre

Cost centre is the important concept to be known in costing. Cost centre refers to a section of the business to which costs can be charged. It may be a location (a department, sales area), an item of equipment (a machine, a delivery van), a person (salesman, machine operator), or a group of these.

Cost unit

It is a unit of quantity of product, service, or time (or a combination of these), in relation to which the cost can be ascertained or expressed.

Self Assessment Questions

1. Unexpired cost is termed as ____________.
2. Different types of job costing are _____________,____________ and ___________.
3. Different types of process costing are __________, _________ and _____________.

11.5 Techniques of Costing

Techniques refer to principles and rules that are applied for ascertaining the cost of the product manufactured or an activity rendered. The following are the costing techniques generally used:

- ***Historical costing –*** In this system, costs are determined after they are incurred.
- ***Standard costing –*** In this system, standard costs are ascertained and then compared with the actual cost and the variance, if any, is determined. Standard costs are predetermined costs in conformity with the most efficient operations or industry benchmark.
- ***Absorption or full costing –*** In this method, all costs, both fixed and variable are charged to the products, jobs, or processes.
- ***Variable or marginal costing –*** In this method, only variable costs are charged to the product or jobs. The fixed costs are written off against profits in the period that they arise.
- ***Uniform costing –*** It is an attempt by several undertakings to use similar costing principles or practices.

11.6 Classification of Cost

The elements of costs are classified as materials, labour, and expenses. These three elements of cost would be grouped into direct and indirect categories. Following are the three broad elements of cost.

- Material – direct (chargeable) and indirect
- Labour – direct and indirect
- Expense- direct and indirect

Let us discuss the elements in detail.

1. ***Direct material*** – It refers to the cost of materials that are conveniently and economically traceable to specific units of output. E.g., raw cotton in textiles, crude oil to make diesel, steel to make automobiles, components or parts , primary packing materials, import duties, dock charges, and transport of raw materials.
2. ***Direct labour*** – It is defined as the labour of those workers who are engaged in the production process. It is the labour expended directly upon the materials comprising the finished goods.
3. ***Direct expense*** – It includes any expenditure other than direct material and direct labour directly incurred on a specific product or job. E.g., cost of hiring special machinery or plant, cost of special moulds, designs and patterns, experimental cost on models and pilot schemes, fee paid to architects, surveyors, inward carriage and freight on special materials, cost of patent, etc.
4. ***Factory overhead*** – It is defined as the cost of indirect materials, indirect labour, and indirect expenses.
    - ***Indirect material*** – It refers to materials that are needed for the completion of the product but whose consumption with regard to the product is either so small or so complex that it would not be appropriate to treat it as a direct material item. These materials cannot be conveniently assigned to specific physical units. E.g., lubricants, cotton waste, hand tools, works stationery.
    - ***Indirect labour*** – It includes foremen, shop clerks, general helpers, cleaners, material handlers, plant guards, and maintenance men.

- ***Indirect expense*** – It covers all indirect expenditures incurred from the time production has started to its completion and its transfer to the finished goods store. E.g., heat, light, maintenance, factory and manager's salary.

5. ***Selling, distribution, and administration overhead cost*** – Such expenses are generally incurred when the product is in saleable condition. It includes advertising, salesmen salaries, commission, packing, storage, transportation, and sales administrative costs.
6. ***Fixed cost*** – It is a cost that does not change in total for a given time period despite wide fluctuations in the output or volume of activity. These costs are also known as standby costs, capacity costs, or period costs. E.g., rent, property taxes, supervising salaries, depreciation of office facilities, advertising, and insurance.

   Classification of fixed cost

   There are various classifications under fixed cost.

   - ***Committed cost*** – Such costs are primarily incurred to maintain the company's facilities and physical existence and over which management has little or no discretion. E.g., depreciation on Plant &Machinery, taxes, insurance, rent, etc.
   - ***Managed cost*** – Such costs relate to the current operations which must continue to be paid to ensure the continued operating existence of the company. E.g., staff and management salaries.
   - ***Discretionary cost*** – Such costs are also known as programmed cost. They are incurred due to special policy decision, management programme, new research, or new system development.
   - ***Step cost*** – Such costs are constant for a given amount of output and then increase by a fixed amount at a higher output level. E.g., one supervisor is required for a salary of Rs.10000 per month for every 50 workers. The cost of supervisor salary increases to Rs.20000 per month on employing the 51st worker.

7. ***Variable cost*** – It varies directly and proportionately with the output. There is a constant ratio between the change in the cost and the change in the level of output. E.g., direct material, direct labour, and

variable overheads (factory supplies, indirect materials, sales commission, office supplies). If the factory is shut down, variable costs are eliminated.

8. ***Mixed cost*** – It is made up of fixed and variable element. This cost is a combination of semi-variable cost and semi-fixed costs. It fluctuates with volume due to the variable component. However, due to the fixed component it does not change in direct proportion to output.

   Semi-fixed cost is the cost which remains constant up to a certain level of output after which it becomes variable.

   Semi-variable cost is the cost which is basically variable but whose slope may change abruptly when a certain output level is reached.

9. ***Product cost*** – It is identified with the product and included in inventory values. In other words, it is the cost included in the cost of manufacturing a product. It is composed of four elements- direct materials, direct labour, direct expenses, and manufacturing overhead.

10. ***Period cost*** – It is not identified with the product or job and is deducted as expenses during the period in which it is incurred. It is not carried forward as a part of value of inventory to the next accounting period.

11. ***Opportunity cost*** – It is a cost of the opportunity lost. It is the cost of selecting one course of action in terms of the opportunities that are given up to carry out that course of action. It is the benefit lost by rejecting the best competing alternative to the one chosen.

12. ***Sunk cost*** – It is the cost that has already been incurred. It is generally unavoidable because this cost cannot be changed once incurred. If the plant has a book value of Rs.10 lakh and a scrap value of Rs.50000, then the sunk cost is Rs.9.5 lakh.

13. ***Relevant cost*** – It is the future cost that differs between alternatives. It may also be defined as the cost which is affected and changed by a decision. It is not historic (sunk) cost and is only incremental (additional) or avoidable cost.

14. ***Differential cost*** – It is the difference in total costs between any two alternatives. It is equal to the additional variable expenses incurred with respect to the additional output, plus the increase in the fixed costs, if any.

15. ***Imputed cost*** – It is the cost that is not actually incurred in some transaction but is relevant to the decision as it pertains to a particular situation. E.g., interest on internally generated funds, rental value of company owned property, and salaries of owners.
16. ***Out-of-pocket cost*** – While imputed cost does not involve cash outlays, out-of-pocket cost signifies the cash cost incurred on an activity. This cost concept is significant for the management in deciding whether a particular project will at least return the cash expenditure associated with the project or not.
17. ***Shut down cost*** – It is a cost that has to be incurred under all situations, in case the manufacturing of a product is stopped or a department or a division is closed down. It is a fixed cost. It also refers to a minimum fixed cost that is incurred in the event of closure.

Self Assessment Questions

4. Standard costs are predetermined costs that are compared with actual costs and the variance is determined. (True/False)
5. _______ include costs, both fixed and variable, that are charged to the products, jobs, or process.
6. Cost of hiring special machines and cost of special moulds are examples of _______.
7. _______ costs are unavoidable because they cannot be changed once incurred.

11.7 Elements of Cost

Every product manufactured, whether a pin or a computer, needs resources. The management must know the cost of using their resources for its planning and controlling function. Therefore, the elements of costs are classified as materials, labour, and expenses. These three elements of cost would be grouped into direct and indirect categories

- ***Prime cost –*** It is the total of direct materials cost, direct labour cost, and chargeable expenses.
- ***Factory cost –*** It consists of prime cost and factory overheads.
- ***Office cost or cost of production –*** It comprises factory cost and office and administration overheads.

- ***Total cost* –** By adding the selling and distribution expenses to the cost of production, one can get the total cost or cost of sales.

11.8 Statement of Cost (Cost Sheet)

Cost sheet is a statement prepared to show the different components of the total cost. It generally shows the total cost and sales as well as cost and selling price per unit. It is generally presented in a tabular form.

Specimen of Cost Sheet

Cost Sheet for the period __________

Production _____ units

		Total Cost	Cost per unit
	Opening Stock of Raw Materials		
	Purchases		
	Carriage Inward		
	(-) Closing Stock of Raw Materials		
	(-) Scrap		
	Direct materials consumed (I)		
	Direct Wages (II)		
	Direct Expenses (III)		
I	**PRIME COST = (I)+ (II)+(III)**		
(+)	**Factory Overheads**		
	Indirect Materials		
	Loose Tools		
	Indirect Wages		
	Rent and Rates (factory)		
	Lighting and Heating (factory)		
	Power and Fuel		
	Lubricant		
	Repairs and Maintenance		
	Drawing Office Expenses		
	Cost of research		
	Depreciation of factory plant		
	Works Stationery		
	Welfare service expenses		
	Insurance – Fixed assets		

	Insurance – Stock and finished goods		
	Work's Managers salary		
II	**FACTORY OR WORKS COST**		
(+)	Opening stock of Work-in-progress		
(-)	Closing stock of Work-in-progress		
III	**COST OF GOODS MANUFACTURED**		
(+)	**Office and Administrative overhead**		
	Rent and Rates (office)		
	Salaries (office)		
	Lighting and Heating		
	Insurance of office building		
	Telephone and Postage		
	Printing and Stationery		
	Depreciation on furniture and fixtures		
	Legal Expenses		
	Audit fee		
	Bank Charges		
IV	**COST OF PRODUCTION**		
(+)	Opening Stock of Finished Goods		
(-)	Closing Stock of Finished Goods		
V	**COST OF GOOD SOLD**		
(+)	Selling and Distribution Overhead		
	Showroom rent and rates		
	Salesman's salary		
	Commission		
	Travelling expenses of salesman		
	Advertisement		
	Bad debts		
	Carriage outward		
	Samples and other free gifts		
VI	**COST OF SALES**		
VII	**NET PROFIT (LOSS)**		
VIII	**SALES**		

The following items are not included in Cost Sheet.

a) Income tax	i) Commission to managing directors
b) Dividends to shareholders	j) Underwriting commission
c) Premium on redemption of shares and debentures	k) Writing off goodwill and preliminary expenses
d) Capital losses i.e., loss out of sales	l) Reserve for bad debts
e) Interest on loan or debentures or bank interest	m) Transfer to all reserves or appropriation of profits
f) Donations	n) Share premium
g) Capital expenditure	o) Interest on capital
h) Discounts on shares and debentures	p) Drawing of proprietors
	q) All personal expenses of owner

11.9 Solved Problems

Illustration 1:

Prepare a cost sheet from the following data:

Direct materials Rs.2,00,000

Factory expenses Rs.1,20,000

Office expenses Rs.90,000

Total sales Rs.6,50,000

Prime cost Rs.4,10,000

10% of the output is in stock

Solution:

Cost Sheet

Direct materials	2,00,000
Direct wages (Prime cost minus Direct materials)	2,10,000
Prime Cost	4,10,000
Factory expenses	1,20,000
Factory Cost	5,30,000
Office expenses	90,000
Cost of Production	6,20,000
Less: closing stock of finished goods 10% of 6,20,000	-62,000
Cost of Sales	5,58,000
Profit (balancing figure)	92,000
SALES	6,50,000

Illustration 2:

Prepare a cost sheet for the following information obtained from Alice Ltd.

Stock on 1 Jan, 2007 :		**Work-in-progress : 1.1.2007**	**64,000**
Raw materials	40,000	31.12.2007	72,000
Finished goods	30, 000	Goodwill written off	40,000.
Purchases of raw materials	2,40,000	Stock on 31.12.2007	
Direct wages	1,36,000	Raw materials 42,000	42,000
Works expenses	70,400	Finished goods	32,000
Dividends paid	40,000	Sale of finished goods	5,50,000
Office expenses	24,000.	Payment of sales tax	16,000
Depreciation	10,000		
Selling and distribution expenses	32,000		

Solution:

Cost Sheet for January 2007

Opening stock of raw materials	40,000	
Add: Purchases of raw materials	2,40,000	
Less: Closing stock of raw materials	42,000	
Raw materials consumed		2,38,000
Direct wages	**1,36,000**	
Prime Cost		3,74,000
Factory Overheads		
Works expenses	70,400	
Depreciation	10,000	
		4,54,400
Add : opening stock of WIP	64,000	
Less: closing stock of WIP	(72,000)	
Works Cost		4,46,400
Office and Administration overheads expenses	24,000	
Cost of Production		4,70,400
Add : opening stock of finished goods	30,000	
Less : closing stock of finished goods	(32,000)	

Cost of Goods sold		4,68,400
Add: Selling and distribution expenses	32,000	
Cost of Sales		5,00,400
Add: Sales Tax	16,000	
Total Cost		5,16,400
Profit		**33,600**
Sales		5,50,000

Activity 1

Give five examples for each type of overhead.

Activity 1: Solution

Refer to section 11.6

Illustration 3:

A factory produces a standard product. Prepare a cost sheet of January 2000 from the following information:

	Rs.
Raw materials	91,000
Direct wages	29,000
Other direct expanse	11,000
Factory overheads 80% of direct wages	
Office overheads 10% of works cost	
Selling and distribution expenses Rs.2 per unit sold	
Units produced and sold during the month 10,000	
Also find the selling price per unit on the basis that profit mark up is uniformly made to yield a profit of 20% of the selling price. There was no stock or work-in-progress either at the beginning or at the end of the period.	

Solution:

Cost Sheet for the period ………

			Total
	Direct Materials	91,000	
	Direct Wages	29,000	
	Direct expenses	11,000	
I	**Prime Cost**		**1,31,000**
	(+) Factory overhead		
	80% of direct wages	23,200	
II	**Factory or Works Cost**		**1,54,200**
	(+) Office overhead		
	10% of work cost office overhead	15,420	
III	**Cost of Production/Cost of goods sold**		**1,69,620**
	Selling and distribution 2 units (10,000)	20,000	
IV	**Cost of Sales**		**1,89,620**
	Profit 25% on selling price #		47405
V	**Sales**		**2,37,025**

Working Notes:

Profit is 20% of selling price.

If selling price is Rs.100, profit is Rs.20. Therefore, cost price is Rs.80.

If cost price is Rs.80, profit is Rs.20 or 25% (100 x (20/80)

If cost price is Rs.189620, profit is Rs.47405 (189620 x (25/100)

Illustration 4:

The following data are related to the manufacture of a standard product during the month of July 2009.

Raw materials consumed	Rs.15,000
Direct wages	Rs. 9,000
Machine hours worked	900 hours
Machine hours rate	Rs.5
Administrative overheads	20% of works cost
Selling overheads	Re.0.50 per unit
Units produced	17,100
Units Sold	16,000 @ Rs.4 per unit

Prepare a cost sheet from the above to show:

a. The cost per unit
b. The profit per unit sold and profit for the period

Solution:

Units produced 17,100

Particulars		Amount	Cost/ unit
Raw materials consumed	15,000		0.88
Direct Wages	9,000		0.53
Direct Expense (900 x 5)	4,500		0.26
Prime cost		**28,500**	**1.67**
Add: Factory overheads	NIL		
FACTORY /WORKS COST		**28,500**	**1.67**
Add: Admn. overheads (20% of works cost)	5,700		0.33
COST OF PRODUCTION		**34,200**	**2.00**
Add: Selling overheads(0.50 per unit) 16000 x 0.50 = 8,000	8,000		0.50
Add: op.stock of F. goods	NIL		
Less: Cl. Stock of F. Goods (1100 units) 1100 x 2.00 = 2200	(2,200)		
Cost of Sales (sold 16,000 units)		40,000	2.50
Profit 1.50 x 16,000 = 24,000		24,000	1.50
Sales 16,000 x 4.00 = 64,000		64,000	4.00

Illustration 5:

Vijay industries manufactures a product X. On 1st January, 2007, there were 5000 units of finished product in stock.

Work-in-progress Rs.57,400
Raw materials Rs.1,16,200

The information available from cost records for the year ended 31st December, 2007 is as follows:

Direct material	9,06,900
Direct labour	3 ,26,400
Freight on R M purchased	55,700
Indirect labour	1,21,600
Other factory overhead	3,17,300

Stock of raw materials on 31st Dec 2007	96,400
Work-in-progress on 31st Dec 2007	78,200
Sales (1,50,000 units)	30,00,000
Indirect materials	2,13,900

There are 15000 units of finished stock in hand on 31st December 2007. Prepare a statement of cost and profit assuming that opening stock of finished goods is to be valued at the same cost per unit as the finished stock at the end of the period.

Solution:

Statement of Cost and Profit of Product X

Particular	Rs.	Rs.
Opening Stock of Raw Materials	1,16,200	
Add: Direct Materials	9,06,900	
Add: Freight on Raw Materials purchased	55,700	
Total	**10,78,800**	
Less: Closing stock of Raw Materials	[96,400]	
Value of Raw Materials consumed		9,82,400
Add: Direct Wages		3,26,400
Prime cost		**13,08,800**
Add: Factory Overheads:		
Indirect Materials	2,13,900	
Indirect Labour	1,21,600	
Other factory overhead Total	3,17,300 6,52,800	
Add: Opening Work-in-progress **Less**: Closing Work-in-progress	57,400 7,10,200 78,200 6,32,000	**6,32,000**
Factory cost/ Works cost		**19,40,800**
Add: Op. Stock of F.Goods 5000 units @ Rs. 12.13 per unit (see working notes)		60,650
Total		20,01,450
Less: Cl. Stock of F. Goods 15000 units @ Rs.12.13 (see working notes)		1,81,950
Cost of Goods Sold		**18,19,500**
Profit		11,80,500
Sales		**30,00,000**

Working Notes:

Units produced during the year are not given. Therefore it is computed as follows:

Sales = Opening stock + Units Produced - Closing Stock

1,50,000 = 5000 + X - 15,000

- X = 5000 – 15,000 – 1,50,000

X = 1,60,000 units

Value of Cl. Stock = $\frac{\text{Total Cost}}{\text{Units Produced}} = \frac{\text{Rs.19,40,800}}{\text{Rs.6,000}}$ = Rs. 12.13 / unit

= 15000 units x Rs.12.13 = Rs.1,81,950

Value of Op Stock = 5000 units x Rs.12.13 = Rs. 60,650

Self Assessment Questions

8. Direct material+ Direct labour +Direct expenses= _____.
   a. Prime cost
   b. Factory cost
   c. Cost of production
   d. Total cost
9. Prime cost +production overheads=_____.
   a. Prime cost
   b. Factory cost
   c. Cost of production
   d. Total cost
10. Factory cost + administration overheads=_____.
    a. Prime cost
    b. Factory cost
    c. Cost of production
    d. Total cost
11. Cost of production+ selling and distribution overheads=_____.
    a. Prime cost
    b. Factory cost
    c. Cost of production
    d. Total cost

12. If opening stock is Rs.75,000, purchase of materials is Rs.2,50,000 and closing stock is Rs.85,000, then materials consumed is Rs. _____
    a. 3,25,000
    b. 2,60,000
    c. 2,40,000
    d. 4,10,000
13. Cost of goods sold = Cost of production+________ - _______.
    a. Closing WIP, Opening WIP
    b. Opening WIP, Closing finished goods
    c. Closing finished goods, Opening WIP
    d. Opening finished goods, Closing finished goods
14. The total cost per unit is Rs.1850. If the profit required is 25% on selling price, then the selling price should be fixed at Rs._______.
    a. 2,312
    b. 2,467
    c. 2,500
    d. 2,367

11.10 Summary

Let us recapitulate the important concepts discussed in this unit:

- Costing is the process of determining the cost of doing something, e.g., cost of manufacturing an article, rendering a service or performing a function.
- Costing includes the techniques and processes of ascertaining cost.
- CIMA defines the term cost as "the amount of expenditure (actual or notional) incurred on or attributable to a given thing". The given thing may be considered as a product, service, or any other activity.
- Batch costing is the method used to determine the cost of a group of identical products. The batch that consists of similar products is a unit and not a single item within the batch.
- Contract costing is a method based on the principle of job costing used by house builders and civil contractors. The contract becomes the cost unit for which relevant costs are determined

- The elements of costs are classified as materials, labour, and expenses. These three elements of cost would be grouped into direct and indirect categories.

11.11 Glossary

Direct cost: Cost that is traceable with the final product or service.

Indirect cost: Cost that is not traceable with the final product or service.

Prime cost: Total of direct material, direct labour, and direct expenses.

Method of costing: Process of determining the cost of a product or service.

11.12 Terminal Questions

The following extract refers to a commodity for the half year ending 31st March, 2008.

Purchase of raw materials	1, 20,000	Direct wages	1, 00,000
Rent, rate, insurance, and works expenses	40,000	Opening stock Raw materials Finished goods (1000 units)	 20,000 16,000
Work-in-progress: opening closing	 4, 800 16, 000	Closing stock: raw material F. Goods (2,000 tons)	 22, 240
Carriage inwards	1, 440	Sale of finished goods	3, 00,000
Cost of factory	8,000.		

Advertising, discounts allowed, and selling cost Re.1 per ton sold. Production during the year is 16,000 tons. Prepare a cost sheet.

2. Calculate the cost of raw materials purchased from the following data:
   Opening stock of raw materials Rs.10,000
   Closing stock of raw materials Rs.15,000
   Expenses on purchases Rs.5,000
   Direct wages Rs.50, 000
   Prime costs Rs.1, 00,000

11.13 Answer

Self Assessment Questions

1. Assets
2. Batch costing, contract costing and composite costing
3. Unit costing, operating costing and operation costing
4. True
5. Absorption costing
6. Direct costing
7. Sunk Cost
8. a
9. b
10. c
11. d
12. c
13. d
14. b

Terminal Questions

1. **Prime Cost,** 2,19,200, **Works cost** 2,56,000, **Cost of production** 2,56,000, **Cost of Goods Sold,** 2,56,000 Total Cost 2,55,000 Profit 45,000
2. Cost of Raw Materials purchased is Rs.50,000

11.14 Case Study

Cost Analysis

Sycon Technology Inc. (STI) is an NRI-owned company headquartered in Silicon Valley, California, U.S.A. The STI provides software services and software products in the areas of telecom and networking technologies. The main line of work is in turnkey software projects in those areas. It has been growing phenomenally in the past two years. Yet, it has been refusing projects since it is unable to handle more business. Anupam Singh, the

CEO, is concerned about the state of affairs because refusing business is not in the long-term interest of the company. Due to non-availability of experienced persons, he is serious in expanding his business.

The Chief Operating Officer (COO) of STI, N.K. Singh has suggested to the CEO that a possible solution can be to set up a development centre in India. The reason being that a lot of talented software engineers are available in India and the cost of operating the centre would be much lower than expanding the company in the U.S.A itself. To carry a feasibility study of setting up the new development centre, Anupam Singh hires the services of Delhi-based consultant – ABC Consultants.

ABC Consultants identified two locations for setting up the development centre: Delhi and Gurgaon. The major cost elements associated with these two locations as identified by ABC after wide-ranging consultations and surveys are summarised below:

Rental of office space: Delhi office, Rs.3,000 per square feet per annum; Gurgaon office, Rs.900. The development centre would require the office for 50 engineers. On an average, 100 square feet per engineer would be required after taking into account all service areas.

Setup costs including architect's fee: Delhi office, Rs.12,00,000 and Gurgaon office, Rs.17, 00,000.

Cost of 64kpbs STP Internet shared with other companies through Software Technology Park (STP): Delhi site, Rs.10,00,000; Gurgaon site Rs.12,00,000. However, the running costs for both the sites would be Rs.3,00,000 per annum.

Average price of personal computers, Rs.60,000 and workstation cost to buy additional equipment to set up the office such as UPS, LAN hubs, routers, Ethernet switch, etc. is Rs.85,000 per work station at both the sites.

- Employee compensation:
  - (i) Annual salary, Rs.2,00,000
  - (ii) Housing facility or monthly rent of a two-bedroom apartment: Delhi, Rs.9,500; Gurgaon, Rs.4,500.
  - (iii) Transport facility or hiring of buses (monthly charges): Delhi, Rs.17,000; Gurgaon Rs.22,000 each.

- Cost of running offices:
  - (i) Electricity charges (annual) : Delhi, Rs.6,00,000; Gurgaon, Rs.5,50,000
  - (ii) Annual water charges: Delhi, Rs.25,000; Gurgaon, Rs.38,000.
  - (iii) Telephone charges: Rs.20,000 monthly irrespective to the location.
- Consultants fee or charges: Rs.3,00,000.

  Based on the above facts, ABC Consultants prepared a report (cost schedule) for consideration of the CEO, as given in Exhibit 1:

Exhibit 1

Cost Schedule/Report (Annual Costs)
Relating to Development Centres

Cost Elements	***Location***		
	***Delhi* Rs.**	***Gurgaon* Rs.**	
Fixed Costs : (A)			
Space rental	1,50,00,000 *	45,00,000**	
Setup costs	12,00,000	17,00,000	
STP link costs	10,00,000	12,00,000	
Equipment costs	42,50,000	42,50,000	
Consultant's fee	3,00,000	3,00,000	
	2,17,50,000	1,19,50,000	
Variable Costs : (B)			
Salary	1,00,00,000	1,00,00,000	
Employee housing	57,00,000[1]	27,00,000[2]	
Employee transport	6,12,000[4]	7,92,000[5]	
Electricity charges	6,00,000	4,50,000	
Water charges	25,000	38,000	
Telephone charges	2,40,000[7]	2,40,000	
STP link usage charges	3,00,000	3,00,000	
	1,74,77,000	1,46,20,000	
Total (A + B)	3,92,27,000	2,65,70,000	

*(50 X 100 X Rs 3,000)
**(50 X 100 X Rs 900)
[1](Rs 9,500 X 12 X 50)
[2](Rs 4,500 X 12 X 50)

[4](3 X Rs 17,000 X 12)
[5](3 X Rs 22,000 X 12)
[7](Rs 20,000 X 12)
*Costs which do not vary with a change in number of employees
**Costs which change directly with the change in number of employees.

On the basis of the above cost analysis, ABC consultants have recommended that the STI's development centre in India should be located in Gurgaon.

Discussion Question:

Should the Consultant's recommendation be accepted?

Source: *Khan and Jain, Management Accounting 4/e, TMH*

Solution to the case study

1. Fixed costs are non-time cost and should be recovered over the life of the asset. The setup costs and STP link costs are fixed costs, having a life of four years. They should be assumed to have been incurred thought the 4-year period.
2. The consultant fee is sunk cost.
3. Equipment costs, salary and telephone charges are the same for all the locations and, therefore, irrelevant cost with respect the decision to locate the development centre.
4. Cost with respect to the decision to locate the development centre.

In the light of these, the CFO prepared the following cost report.

Cost Elements	***Delhi Rs.***		***Gurgaon Rs.***
Fixed Costs			
Space rental	1,50,00,000		35,00,000
Setup costs (total ÷ 4)	3,00,000		8,75,000
STP link costs (total ÷ 4)	10,00,00		8,00,000
Total FC	1,55,00,000		45,75,000
Variable Costs			
Employee housing	57,00,000		30,00,000
Employee transport	6,12,000		7,92,000
Electricity charges	6,00,000		7,00,000
Water charges	25,000		28,000
Total VC	69,37,000		45,20,000
Total (A + B)	2,24,87,000		9,09,5000

Recommendation: The CFO has recommended the setting up of the development centre at Gurgaon.

References:

- Raman, B. S., *Management Accounting*, United Publishers
- Khan and Jain, *Management Accounting 4/e,* TMH
- Drury, C., *Management and Cost Accounting 6/e,* Cengage Learning
- Dr. Lal, J, *Accounting for Management*, HPH

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Unit 12 Marginal Costing and Break – Even Analysis

Structure:

12.1 Introduction
Objectives
12.2 Marginal Costing
12.3 Assumptions of Marginal Costing
12.4 Differences Between Absorption Costing and Marginal Costing
12.5 Marginal Cost
12.6 Contribution
12.7 Cost Volume Profit (CVP) Analysis
12.8 Profit Volume Ratio (MCSR or C/S Ratio)
12.9 Break-Even Analysis
12.10 Break-Even Chart
12.11 Target Profit
12.12 Margin of Safety (MOS)
12.13 Applications of Marginal Costing
12.14 Limitations of Marginal Costing
12.15 Solved Problems
12.16 Summary
12.17 Glossary
12.18 Terminal Questions
12.19 Answers
12.20 Case Study

12.1 Introduction

In the previous unit we learnt the meaning, classification, elements, and statement of cost. We also analysed the objective, methods, and techniques of costing.

Cost control is as important as cost ascertainment. If costs are not controlled, the company will not be able to make good profits and its survival becomes difficult.

There are many techniques of cost control. Of them, three techniques are most important. They are marginal costing, budgetary control, and standard

costing. In this unit and the next unit we shall learn about the technique of marginal costing and its applications. We shall also analyse the techniques of budgetary control and standard costing in unit 14 and unit 15 respectively.

Objectives:

After studying this unit, you should be able to:

- explain marginal costing
- explain the assumptions of marginal costing
- differentiate between marginal costing and absorption costing
- explain the principles of CVP analysis and break-even analysis
- apply the principles of CVP analysis and break-even analysis in business decisions

12.2. Marginal Costing

Marginal costing is defined as

"The ascertainment of marginal cost and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable cost."

– CIMA London

"*It is a special technique of costing under which the costs are separated into variable and fixed costs and only the variable costs are charged to operations, processes or products and the fixed costs are charged against the profits of the period in which they are incurred.*"

– B. S. Raman

12.3 Assumptions of Marginal Costing

Marginal costing is based on the following assumptions:

1. Segregation of cost into fixed and variable
   The whole principle of marginal costing is based on the idea that some costs vary with production while some costs don't. Therefore, it is assumed that a clear bifurcation between fixed and variable costs is possible. Even if some costs do not entirely qualify as fixed or as variable, it is still possible to separate such mixed cost with respect to the amount, which remains fixed and the amount which varies with production.

2. Volume is the only factor which influences the cost
   It is assumed that other factors like the demands, tastes, and preferences of consumers, availability of substitute products, availability and price of inputs, etc. are constant. Hence, volume is the only factor which influences the cost.
3. Constant selling price
   It is assumed that the selling price will be constant for any level of sales.
4. Constant total fixed cost
   It is assumed that the total fixed cost will be constant for any level of production.
5. Constant variable cost per unit
   It is assumed that the variable cost per unit will be constant for any level of production.
6. No closing stock
   It is assumed that the firm will be able to sell all its production. All the units produced would be sold. Hence, there would be no opening and closing stocks.
7. Linear relationship between costs and revenues
   It is assumed that the costs and revenues are linearly related to volume. The change in costs and revenues is proportionate to the change in volume (number of units sold).

Self Assessment Questions

1. Elements of costs are classified into ______ and ______.
2. Fixed cost is treated as ___________ and charged to P& L account.
3. ______________ costs are treated as product cost.
4. The ______________shows the relationship among unit sale price, variable cost, sales volume, sales mix, and fixed cost.

12.4 Differences between Absorption Costing and Marginal Costing

Table 12.1 clearly shows the differences between absorption costing and marginal costing

Absorption Costing	Marginal Costing
It is known as full costing. Both fixed and variable are included to ascertain the cost.	Only variable costs are included. Fixed costs are recovered from contribution.
Different unit costs are obtained at different levels of output because of fixed expenses remaining the same.	Marginal cost per unit remains same at different levels of output because variable expenses vary in the same proportion in which output varies.
Difference between sales and total cost (marginal cost and fixed cost) is profit.	Difference between sales and marginal cost is contribution and difference between contribution and fixed cost is profit or loss.
A portion of fixed cost is carried forward to the next period because closing stock of work-in-progress and finished goods are valued at the cost of production, which is inclusive of fixed cost.	Stock of work-in-progress and finished goods are valued at marginal cost. Fixed cost of a particular period is charged to that very period and is not carried over to the next period.
The apportionment of fixed expenses on an arbitrary basis gives rise to over or under absorption of overheads.	Products are charged only with variable cost, hence marginal costing does not lead to over or under absorption of fixed overheads.
It affects managerial decisions in certain areas. E.g., whether to accept the export order or not, whether to buy or manufacture, etc.	It is very helpful in taking managerial decisions. It considers the additional cost involved, assuming fixed expenses to remain constant.
Costs are classified according to functional basis such as production cost, office and administrative cost, and selling and distribution costs.	Costs are classified according to the behaviour of costs – fixed costs and variable costs.
It fails to establish relationship of cost, volume, and profit.	CVP relationship is an integral part of marginal costing.

Let us understand the implications of these differences with the help of an illustration.

Illustration 1

Hydro Electric Ltd. furnishes the following information from its cost records for the first quarter of the current year.

Production (units)	1,100
Closing stock (units)	100
Fixed overheads	Rs.4,000
Other fixed overheads	Rs.300
Variable costs per unit	6
Selling price per unit	Rs. 12

Prepare the income statement under absorption and variable costing.

Solution

Income Statement (Absorption Costing)

Particulars	Amount	Amount
Sales revenue (1,100 x Rs.12) (A)		13,200
Less : Total cost of manufacturing:		
Variable costs (1,100 x Rs.6)	6,600	
Fixed overheads	4,400	
Other fixed expenses	300	
Total	11,300	
Less : Cost of inventory at the end of the year (100 units x Rs.10.27[1])	1027	
Cost of goods manufactured and sold (B)		10273
Profit (A) - (B)		2927

1. (Rs.11,300/1100 units) =10.27

Income Statement (Variable Costing)

Particulars	Amount	Amount Rs.
Sales revenue (1,100 x Rs.12)		13,200
Less : Variable costs (production costs) (1,100 x Rs.6)	6,600	
Less : Cost of inventory at the end to the year (100 x Rs.6)	600	
Cost of goods manufactured and sold		7200
Contribution		6000
Less: Fixed costs:		
Fixed overheads	4,000	
Other fixed expenses	300	4,300
Net income before taxes (loss)		1,700

Inference

In absorption costing, the net income before taxes is Rs.2927, while in marginal costing, it is Rs.1700. This significant difference can be attributed to the fact that under absorption costing, the fixed manufacturing overheads are included in inventory, whereas in variable costing, inventory carries only variable costs. Hence, the closing inventory is valued at a higher level in absorption costing (Rs.10.27 per unit) as compared to Rs.6 under marginal costing.

12.5 Marginal Cost

According to C.I.M.A. London, "Marginal Cost means the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit". Marginal cost per unit remains unchanged irrespective of the level of activity or output. It is also known as variable cost. Marginal cost is the sum total of direct material cost, direct labour cost, variable direct expenses, and all variable overheads. The marginal cost of producing a unit declines as output increases.

12.6 Contribution

It is the difference between sales and variable cost. It is 'the excess of selling price over variable cost per unit'. It is also termed as contribution margin.

Total contribution	**=**	**Total sales – total variable cost**
Contribution (per unit)	**=**	**Selling price per unit – variable cost per unit**
Contribution	**=**	**Fixed cost + profit (- loss)**

Contribution indicates the profitability of the firm. It expresses the revenue available for recovering the fixed costs after recovering the variable costs. Higher the contribution, higher is the profitability.

Self Assessment Questions

5. Fixed cost remains constant _________.
6. Those activities that result in cost are known as ___________.
7. Variable cost is fixed ______ but varies in________.
8. Contribution is also known as contribution margin or _____________.
9. Fixed cost – loss = ______________.

Activity 1:

Give five examples for each of the following:

(1) Variable costs

(2) Semi-variable costs

(3) Fixed costs

12.7 Cost Volume Profit (CVP) Analysis

The success of any business is measured by its *profits*. The profit depends on the number of units sold (volume). The *volume* of sales depends on the selling price that in turn depends on the *costs* (fixed and variable). These three factors are interdependent.

A study of the nature of interdependence between these three variables is called Cost Volume Profit (CVP) analysis.

Following is a comprehensive definition of CVP analysis.

"*CVP analysis is the systematic method of examining the relationship between changes in activity (i.e. output) and changes in total sales revenue, expenses, and net profit. Its objective is to establish what will happen to the financial results if a specified level of activity or volume fluctuates. As a model it simplifies the real world conditions that a firm will face.*"

– Colin Drury

Illustration 2: Find the contribution and profit earned if the selling price per unit is Rs.25, variable cost per unit is Rs.20, and fixed cost is Rs.3,05,000 for an output of 80,000 units.

Solution:

Contribution per unit	= Sales – variable cost
	= Rs.25 – Rs.20
	= Rs.5
Contribution	= Contribution per unit x output
	= 5 x 80,000
	= 4,00,000
Profit	= Contribution – fixed cost
	= 4,00,000 – 3,05,000
	= 95,000

Illustration 3: Find the fixed costs if sales is Rs.2,00,000, variable cost is Rs. 40,000, and profit is Rs. 30,000.

Solution:

Sales – variable cost	=	Fixed cost + profit
2,00,000 – 40,000	=	Fixed cost + 30,000
2,00,000 – 40,000 – 30,000	=	Fixed cost
1,30,000	=	Fixed cost

12.8 Profit Volume Ratio (MCSR or C/S ratio)

Profit volume ratio expresses the relationship between contribution and sales. It is also termed as Marginal Contribution Sales Ratio **(MCSR).**

It expresses the rate at which profit increases with the increase in volume. It indicates what percentage of each rupee of sales is available for the coverage of fixed costs and then yields profits.

Computation of C/S ratio
The C/S ratio may be computed using any of the following formulae.

Profit volume ratio (MCSR)

$$= \frac{\text{Total contribution} \times 100}{\text{Sales}}$$

$$= \frac{\text{Total sales} - \text{Total variable costs}}{\text{Total sales}} \times 100$$

Or

$$\text{C/S ratio} = \frac{\text{Contribution per unit}}{\text{Selling price per unit}} \times 100$$

$$= \frac{\text{Selling price per unit} - \text{Variable cost per unit}}{\text{Selling price per unit}} \times 100$$

Or

$$\text{C/S ratio} = \frac{\text{Fixed cost} + \text{Profit}}{\text{Total sales}} \times 100$$

Or

$$\text{C/S ratio} = \frac{\text{Change in profits}}{\text{Change in sales}} \times 100$$

Illustration 5: Calculate MCSR or P/V ratio if the marginal cost is Rs.24,000 and sales is Rs. 60,000.

Solution:

Contribution = Sales – Marginal cost
= 60,000 – 24,000 or 36,000
MCSR = Contribution / Sales x 100
= 36,000 / 60,000 x 100
= 60%

Illustration 6: The sales turnover and profit during two periods are as shown:

	Period 1	**Period 2**
Sales	20,000	30,000
Profit	2,000	4,000

Calculate the MCSR.

Solution:

MCSR = Change in profit/Change in sales x 100
= (4,000 - 2,000) / 30,000 - 20,000 x 100
= 2,000 / 10,000 x 100
= 20%

Illustration 7: Calculate the MCSR from the following details:

	Total sales	**Total costs**
Year ending 31st December, 2006	22,23,000	19,83,600
Year ending 31st December, 2007	24,51,000	21,43,200

Solution:

Profit = Total sales – Total costs
Dec 2006 = 22,23,000 – 19,83,600 = 2,39,400
Dec 2007 = 24,51,000 – 21,43,200 = 3,07,800
MCSR = Change in profit/change in sales x 100
= 68,400 / 2,28,000 x 100
= 30%

Illustration 8: Calculate the sales if marginal cost is Rs.2,400 and MCSR is 20%.

Solution:

Since MCSR is 20%, the variable cost should be 100 – 20% = 80 %
Variable cost (given) = Rs.2,400
Therefore, sales = 2400 / 80%
= Rs.3,000

Now let us know the relationship between contribution and variable cost

We know that,

Sales - Variable cost = Contribution

Or

Sales = Variable cost + Contribution

Or

$$\frac{\text{Sales}}{\text{Sales}} = \frac{\text{Variable cost}}{\text{Sales}} + \frac{\text{Contribution}}{\text{Sales}}$$ (dividing both sides by sales)

Or

$$1 = \frac{\text{Variable cost}}{\text{Sales}} + \frac{\text{Contribution}}{\text{Sales}}$$

$\frac{\text{Variable cost}}{\text{Sales}}$ is called the variable cost ratio or V/S ratio.

Therefore,

1= Variable cost ratio + Contribution to sales ratio

Or

1= V/S ratio + C/S ratio

Or

1- V/S ratio = C/S ratio

Significance of C/S ratio

The following is the significance of C/S ratio:

- *Measure of profitability* - It indicates the profitability. Higher the C/S ratio, higher is the profitability.

- *Profit planning* - The C/S ratio may also be used for determining the desired volume of output for a specified amount of profit.
- *Product mix decision* - In a multi-product firm, P/V ratio helps to know which product is making profit and which product is a burden to the firm. Products having high C/S ratio can be continued and the products having low C/S ratio can be improved to catch up in the market to increase the profitability.
- *Intra-firm comparison* - The profitability of small individual sectors of the business, such as product lines, sales area, salesman, methods of sales, and classes of customers may be compared with the help of this ratio. When comparing firms or products or departments, C/S ratio is used as an important indicator of profitability. The products or departments with higher C/S ratio are preferred over the ones with lower C/S ratio.
- *Inter-firm comparison* - It is possible to compare two firms with respect to their profitability or efficiency by comparing their C/S ratio. Firms with higher C/S ratio are more efficient than the ones with lower C/S ratio. Profitability of a firm can be improved by increasing the C/S ratio.

Let us now understand how to improve C/S ratio.
C/S ratio can be improved by:

- Increasing the selling price
- Reducing the variable costs
- Reducing direct and variable costs by effectively utilising labour, machines, and materials.
- Switching the production to more profitable products showing a higher C/S ratio.

Impact of selling price, fixed cost, and variable cost on C/S ratio

The selling price and variable cost have direct impact on the C/S ratio because C/S ratio is a function of contribution to sales. The effects of changes in selling price, variable cost, and fixed cost on C/S ratio are explained below:

- An increase in selling price increases the amount of contribution and results in an improvement in C/S ratio.

- An increase in variable cost per unit reduces the contribution and results in a decrease in C/S ratio.
- A decrease in variable cost per unit will result in improvement of contribution and simultaneously the C/S ratio will also increase.
- An increase in C/S ratio means lower break-even point and higher margin of safety.
- A decrease in C/S ratio results in an increase of break-even point and lower margin of safety.
- A decrease in selling price of a product results in a decrease in contribution and lowers the C/S ratio.
- An increase or decrease in fixed cost does not affect the C/S ratio, even though it may increase or decrease the total profit.

12.9 Break-Even Analysis

The break-even analysis shows the relationship between costs and profits with sales volume. It portrays the idea that a firm starts making profit once it fully recovers the fixed costs. It shows the minimum sales that a firm must make in order to completely recover its fixed costs.

Break-Even Point (BEP)

BEP is the volume of activity or sales when the organisation's revenues and expenses are equal. At a particular point of sales, the organisations have no profit or loss. This is the point at which the company breaks even. That is, it completely recovers the total costs and starts making profit.

The general formula for computing the break-even sales is:

$$\text{BEP (in units)} = \frac{\text{Fixed expenses}}{\text{Contribution margin per unit}}$$

$$\text{BEP (in Rupees)} = \frac{\text{Fixed expenses}}{\text{Contribution sales ratio}}$$

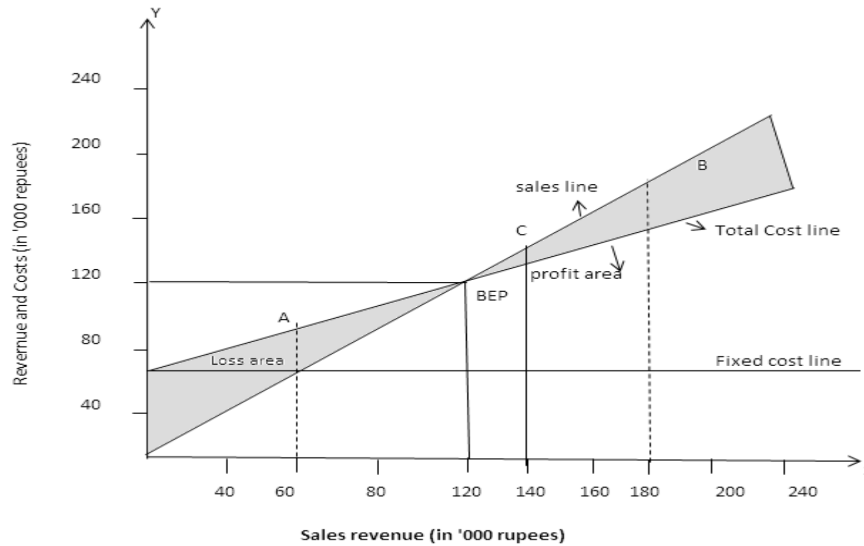
12.10 Break-Even Chart

It is a graphical or visual presentation of the relationship between cost, volume, and profit.

Illustration 10:

Selling price per unit	Rs.10
Fixed cost	60,000
Variable cost per unit	5
Relevant range (units) : Lower limit	6000
: Upper limit	20,000
Break up of variable cost per unit: Direct material Rs.2.00 Direct labour Rs.1.50 Direct expenses Re.1.00 Selling expense Re.0.50	
Actual sales 18000 units	1,80,000
Plant capacity 20,000 units	2,00,000
Tax rate 50%	

At sales level of Rs.60000
Fixed cost = Rs.60000
Variable cost = Rs.30000 (6000x5 per unit)
Total cost = Rs.90000
Sales revenue = Rs.60000 (6000 units at Rs.10 per unit)
Loss = Rs.30000
At sales level of Rs.1800000 (18000 units at Rs.10 per unit)
Fixed cost = Rs.60000
Variable cost = Rs.90000 (18000 x 5 per unit)
Total cost = Rs.150000
Sales revenue = Rs.180000 (18000 units at Rs.10 per unit)
Profit = Rs.30000
Contribution per unit = Selling price per unit – Variable cost per unit
= 10 - 5 = 5 per unit
BEP (in units) = Fixed cost / contribution margin
= Rs.60000 / 5
= Rs.12000 units
BEP (in Rs.) = BEP (in units) x selling price per unit
= 12000 x 10
= 120000



12.11 Target Profit

The target net profit is known as "desired profit". It may be computed using the following formula:

Number of units to be sold = $\frac{\text{Fixed expenses + Desired or target profit}}{\text{Contribution per unit}}$

Illustration 11: Calculate the sales in units and in rupees:

Units produced 60,000

Fixed expenses Rs.1,50,000

Selling price per unit Rs.15

Variable cost per unit Rs.10

Profits to be earned Rs.87,500

Solution:

Sales required = $\frac{\text{[Fixed expenses + target profit]}}{\text{contribution per unit}}$

= [1,50,000 + 87,500] / (15-10)

= 2,37,500 / 5

= 47,500 units

Sales (in Rs.) = 47,500 x 15

= 7,12,500

12.12 Margin of Safety (MOS)

Margin of safety is the difference between the actual sales revenue and the break-even sales revenue.

> Margin of safety = Profit / MCSR
>
> Or
>
> Margin of safety = Actual sales revenue -break-even sales revenue

Illustration 12: Calculate BEP and MOS from the following data:

Sales	–	50,000 units per annum
Selling price	–	Rs.6.00 per unit
Prime cost	–	Rs.3.00 per unit
Variable overheads	–	Re.1.00 per unit
Fixed cost	–	Rs.75,000 per annum

Solution:

BEP	= Fixed cost / (SP - VC) per unit
	= 75,000 / 6 - 4
	= 75,000 / 2 or 37,500 units
BEP in rupees	= BEP in units x selling price per unit
	= 37,500 x Rs.6
	= Rs.2,25,000
MOS	= Actual sales – BEP sales
	= (50,000 x 6) – 2,25,000
	= Rs.75, 000

12.13 Applications of Marginal Costing

Marginal costing helps the management in taking many policy decisions. These are:

- Level of activity planning
- Alternative methods of production
- Make or buy decision
- Fixation of selling price
- Selection of optimum sales mix
- New product introduction

12.14 Limitations of Marginal Costing

There are certain limitations of marginal costing. They can be described as follows:

Suitability **–** The techniques of marginal costing cannot be applied to all types of concerns. E.g., industries working on contract basis.

Inventory valuation difficulties **–** Since the work-in-progress and the closing inventories are valued on marginal cost basis, it will not be a sound decision from the balance sheet point of view.

Segregation of costs **–** Though the marginal costing principles call for the differentiation of costs into fixed and variable, in practice it becomes difficult to classify them precisely.

Self Assessment Questions

10. If the fixed cost is Rs.5000, BEP sales volume is 1250 units, and the contribution per unit is Rs.4, then the selling price per unit is _______.
11. Margin of safety = Actual sales - _________.
12. If the fixed cost is Rs.10000 and the BEP sales is Rs.30000, then the C/S ratio of the firm is _________.
13. C/S ratio is an indication of _________.
    a. Turn over
    b. Fixed costs
    c. Profitability
    d. All the above
14. If the C/S ratio of the firm is 45%, the variable cost to sales ratio is _________.
    a. 100%
    b. 55%
    c. 45.5%
    d. 145%

12.15 Solved Problems

Problem 1. Calculate break-even point from the following data:

Fixed costs Rs.80,000

Variable cost per unit Rs.4

Sales Rs.2,00,000

The number of units involved coincides with the expected volume of output Each unit sells at Rs.20

Solution:

BEP in units = Fixed expenses / contribution per unit
Contribution = S – V
= Rs.20 – Rs.4
= Rs.16
BEP = Rs.80,000 / Rs.16
= 5,000 units

Problem 2: Calculate the break-even point from the following data:
Sales Rs.2,00,000
Fixed expenses Rs.50,000
Variable expenses Rs.1,00,000

Solution: No information is given about the number of units produced, only the cost per unit is given. Therefore, break-even point can be ascertained.

BEP in Rs. = Fixed costs x Total sales / Total Sales – Variable costs
= 50,000 x 2,00,000 / 2,00,000 – 1,00,000
= 1,00,000

Problem 3: Calculate MCSR and BEP from the following data:
Sales Rs.5,00,000
Fixed costs Rs.1,00,000
Profit Rs.1,50,000

Solution:

MCSR = Contribution/Sales
Contribution = Fixed Costs + Profit
= Rs.1,00,000 + Rs.1,50,000
= Rs.2,50,000
MCSR = 2,50,000 / 5,00,000
= 50%
BEP in Rs. = Fixed Costs/MCSR
= 1,00,000 / 50 %
= Rs.2,00,000.

Problem 4: Variable cost per unit is Rs.12. Selling price per unit is Rs.20. Fixed expenses is Rs.60,000. Find BEP and what will be the selling price per unit if the BEP is brought down to 6000 units?

Solution:

BEP in units = FC/CPU

CPU = S - V

= 20 – 12

= Rs.8

= 60,000 / 8

7,500 units

BEP in Rs. = 7,500 units x Rs.20

= Rs.1,50,000.

Selling price = FC / CPU or FC / (SP – VP) per unit

(at BEP - 6000 units) = 60,000 / (x – 12)

6,000 = 60,000 / (x – 12)

6000 (x – 12) = 60,000

x = Rs.22 (on simplification)

Problem 5: Given: fixed expenses Rs.4,000 and break-even point Rs.10,000. Calculate the following:

(1) MCSR

(2) Profit when sales are Rs.20,000

(3) New BEP if selling price is reduced by 20%

Solution:

(1) BEP sales = FC / MCSR

MCSR = FC / BEP Sales

= 4,000 / 10,000 x 100

= 40%

(2) To calculate profit we need to find out contribution

MCSR = Contribution /Sales

40% = Contribution / 20,000

40% x 20,000 = Contribution

Rs.8,000 = Contribution

Contribution = Fixed cost + Profit

8,000 = 4,000 + Profit

4,000 = Profit

(3) New BEP if selling price is reduced by 20%

Let the original selling price be Rs.x

Therefore, at 20 % reduction, the reduction would be [0.2x]

Hence the revised SP = x – 0.2x

= 0.8x

Variable cost = 1- contribution margin

= 1-0.4

= 0.6

New contribution = S – V

= 0.8x – 0.6x

= 0.2x

Sales ratio = 0.2x / 0.8x

= 0.25

BEP in volume = 4,000 / 0.25

= Rs.16,000

Problem 6: Given: fixed cost is Rs.8,000, profit earned Rs.2,000, and BEP sales Rs.40,000. Find the actual sales.

Solution:

MCSR is based on BEP sales

BEP sales = FC / MCSR

MCSR = FC / BEP sales

= 8,000 / 40,000

= 0.2

Actual sales = FC + desired profit / MCSR

= 8,000 + 2,000 /0.2

= Rs. 50,000

12.16 Summary

Let us recapitulate the important concepts discussed in this unit:

Marginal cost is the rate of change in costs if the volume of output is increased or decreased by one unit.

Marginal costing is a technique of costing concerned with the changes in costs and profits resulting from changes in the volume of output. It is very helpful in decision making and is also the most widely used profit planning techniques.

The technique of marginal costing is based on the distinction between product costs and period costs. Only the variable costs are regarded as the cost of the product while the fixed cost is treated as period costs.

The cost volume profit analysis shows the relationship among unit sale price, variable cost, sales volume, sales mix, and fixed cost.

Break-even chart is a graphic or visual presentation of the relationship between cost, volume, and profit. It indicates the point of production at which there is neither profit nor loss. It also indicates the estimated profit or loss at different levels of production.

CVP analysis provides the management with a comprehensive overview of the effects on revenue and costs of all types of short run financial changes.

12.17 Glossary

Break-even point: The level of sales at which the total cost will be equal to the total sales.

C/S ratio: The ratio of contribution to sales.

CVP analysis: Study of inter relationship between cost, volume, and profit.

Marginal cost: The cost of making an additional unit.

Marginal costing: The technique of charging only variable costs to products.

12.18 Terminal Questions

1. A factory is manufacturing sewing machines. The variable cost of each machine is Rs.200 and each machine is sold for Rs.250. Fixed costs are Rs.12,000. Calculate the BEP for output.
2. Calculate break-even point and margin of safety. Fixed cost Rs.1,60,000, variable cost per unit Rs.2, and selling price per unit Rs.18. Also compute the margin of safety if the company is earning a profit of Rs.36,000.
3. Calculate the break-even point and turnover required to earn a profit of Rs.3,600. Fixed overheads Rs.1,80,000, variable cost per unit Rs.2, selling price Rs.20. If the company is earning a profit of Rs.36,000, express the margin of safety available.

4. Given: Variable cost Rs.6,00,000, fixed cost Rs.3,00,000, net profit Rs.1,00,000, sales Rs.10,00,000. Find the following:
   (a) MCSR
   (b) BEP
   (c) Profit when sales amounted is Rs.12,00,000
   (d) Sales required to earn a profit of Rs.2,00,000
5. Given: Fixed costs Rs.4,000, break-even sales Rs.20,000, profit Rs.1,000, selling price per unit Rs.20. Calculate the following:
   (a) Sales and marginal cost of sales.
   (b) New break-even point if selling price is reduced by 10%

12.19 Answers

Self Assessment Questions

1. Variable cost, fixed cost
2. Period cost
3. Variable
4. CVP analysis
5. In total
6. Cost drivers
7. Per unit, total
8. Gross margin
9. Contribution
10. Rs.10
11. Break-even sales
12. 33.33%
13. c
14. b

Terminal Questions

1. Contribution = S –V
   = 250 – 200 or Rs.50
   BEP = FC / Contribution
   = 12,000 / 500 or 240 units
2. Contribution = S – V
   = 18 – 2 = 16.

BEP in units = Fixed costs / contribution per unit
= 1,60,000 / 16
= 10,000 units
Margin of safety = Actual sales (-) break-even sales
Actual sales = Fixed cost + desired profit / contribution per unit
= 1,60,000 + 36,000 / 16 or 12,250 units
Margin of safety = 12,250 -10,000 units or 2,250 units

3. Contribution per unit = S – V or 20 – 2 = 18
BEP in units = FC / CPU
=1,80,000 / 18 = 10,000 units
Break-even sales = BEP in units x selling price
= 10,000 x Rs.20
= Rs.2,00,000
Sales required to earn a profit of Rs.36,000
Sales (required) = [Total fixed overheads + profit desired] / CPU
= 1,80,000 + 36,000 / 18
= 216000/18 =12,000 units
Sales (in Rs.) = 12,000 x Rs.20 = Rs.2,40,000
Margin of safety = Actual sales – break-even sales
= Rs. 2,40,000 – Rs.2,00,000
= Rs.40,000
in terms of units = 12,000 – 10,000 units
= 2,000 units

4. MCSR = Contribution / Sales x 100
= Contribution
= S – V or Rs.4,00,000
= 4,00,000 / 10,00,000 x 100 or 40%
Break-even point = FC / MCSR = 3,00,000 / 0.4 = Rs.7,50,000
Profit when sales amounted to Rs.12,00,000. Contribution 40%
Therefore total contribution 12,00,000 x 40% = Rs.4,80,000
Less fixed costs Rs.3,00,000
Profit = Rs.1,80,000
Sales to earn a profit of Rs.2,00,000 = FC + desired profit / MCSR
= 3,00,000 + 2,00,000 / 40%
= Rs.12,50,000

5. BEP = Fixed costs / MCSR

20,000 = 4,000 / MCSR

MCSR = 4,000 / 20,000 x 100 = 20%

Contribution = Fixed cost +Profit

= 4,000 + 1,000

= Rs.5,000.

MCSR = Contribution / Sales x 100

20 = 5,000 / Sales x 100

= Rs.25,000

Marginal cost of sales = Sales – contribution or 25,000 – 5,000 = Rs.20,000

If selling price is reduced by 10%

New selling price = 20 – 2 = Rs.18

Variable cost = Rs.16 (20 – 20% of 20)

Contribution = Rs.2

New MCSR = 2 /18 x 100.

New break-even sales = FC /SR or 4,000 / 100

= Rs.36,000

12.20 Case Study

Break even Analysis

Amit Behki is an automobile engineer. After graduating from the IIT-Delhi, he is planning to set up an automobile service station in Noida. The Amit Automobile Service Station (AASS) would carry out three activities:

(i) Free service for new vehicles under warranty
(ii) Paid services including changing of parts
(iii) Denting and painting of cars or vehicles

The land on which the AASS would be set up and the estimated cost of Rs. 44, 00,000 is owned by his family. A feasibility analysis conducted by Amit has revealed that the initial fixed cost of setting up the AASS would be as detailed in Exhibit 1.

Exhibit 1: Initial Fixed Cost Estimates

Item/Description	Amount Rs.
Salary and wages	1,57,776
Staff welfare	6,858
Repair and maintenance	32,166
Conveyance	11,184
Printing/Stationery	2,816
General expenses	1,539
Consumable stores (Lubes)	3,656
Postage/Telephone	8,948
Professional fee	15,000
Electricity	18,000
Local taxes	10,000
Total	2,67,937

The feasibility analysis also estimates the revenues and operating cost associated with the three workshop activities as detailed below:

Free service for new vehicles

The service charges would be reimbursed by the vehicle dealer. The average reimbursements for the first, second, and third services would be Rs. 233 per vehicle.

The variable costs related to the various service jobs performed by the cleaner or washer in servicing the vehicles are estimated as shown below.

Details	Rs.
Detergents	20
Diesel	18
Cloth	20
Polish	20
Grease	30
Stationery	5
Customer hospitality (cold drink)	20
	133

Paid services

The variable costs would be the same as in the case of free servicing. An additional cost on the parts changed would average Rs.1,000 per vehicle.

The average revenue per vehicle would be Rs.275. There would also be a 10% margin on the parts changed.

Denting and painting

The lump sum charged for complete painting averages Rs. 8,000 per vehicle. The variable costs per vehicle are also shown below:

Labour (painter) cost		1,500
Material costs:		
Cleanser (4 litres x Rs.26)	104	
Additive solvent (8 litres x Rs.126)	1,008	
Putty	450	
Paint (4 litres x Rs.350)	1,400	
Sheet metal	110	
Sand paper	100	
M-seal	350	
Carbide for welding gas (8 x Rs. 32)	256	
Welding rod	60	
Files (2 x Rs. 375)	150	
Rubbing and polish	200	
Rubber seal compound	150	
Nut bolts	100	4,438
		5,938

Discussion Questions:

1) If Amit wants the AASS to break-even in the first year, compute the break-even:
   (i) In units (number of cars)
   (ii) In amount for all the three services offered
2) If Amit wants to earn a monthly surplus of Rs.10,000, what would be the answer to (i) and (ii)?

Source: Khan and Jain, Management Accounting 4/e, TMH

Solution to Case study

1. Computation of break-even (in units) for free services, paid services, and denting and painting

   Free service: Fixed cost ÷ contribution margin per car = Rs.2, 67,937÷ Rs.100 (Rs.233 – Rs.133)

   = 2,680 vehicles ÷ 312 days (26 days in a month x 12 months) = 9 vehicles daily

   Paid services: Rs.2, 67,937 ÷ Rs.242 [Rs.275 + Rs.100 (0.10 x Rs.1,000) – Rs.133 or Rs.1,275 – Rs.1,033] = 1,108 vehicles ÷ 312 days = 4 vehicles daily

   Denting and painting: Rs.2, 67,937 ÷ Rs.2,062[Rs.8,000 – Rs.5,938]

   = 130 vehicles ÷ 12

   = 11 vehicles per month

2. Computation of break-even (amount)

   Free services: Fixed cost ÷ VC ratio = Rs.2, 67,937 ÷ 0.4292 (contribution margin, Rs.100 ÷ Rs.233, operating revenue) = Rs.6,24,271

   Paid services: Rs.2, 67,937 ÷ 0.1898 (Rs.242 ÷ Rs.1275) = Rs.14,11,681

   Denting and painting: Rs.267,937 ÷ 0.25775 (Rs.2,067 ÷ Rs.8,000) = Rs.10, 39,523

3. Computation of break (units) to earn a monthly surplus of Rs.10,000 (annual surplus, Rs.1,20,000)

   Free services: (Fixed cost, Rs.2, 67,937 +Desired surplus, Rs.1, 20,000) ÷ Rs.100 = 3,880 vehicles per annum ÷ 312 days = 12 vehicles per day

   Paid services: (Rs.2, 67,937 + Rs.1, 20,000) ÷ Rs.242 + 1,603 vehicles ÷312 = 6 cars daily

   Denting and painting: (Rs.2, 67, 937 + Rs.1, 20,000) ÷ Rs.2,062 = 188 vehicles per year ÷ 12 = 16 vehicles monthly.

   Break-even (amount)

   Free services: (Rs.2, 67,937 + Rs.1, 20,000) ÷ 0.4292 = Rs.9, 03,861

Paid services: (Rs.2, 67,937 + Rs.1, 20,000) ÷ 0.1898 = Rs.20, 43,925

Denting and painting: (Rs.2, 67,937 + Rs.1, 20,000) ÷ 0.25775 = Rs.15,05,090.

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Unit 13 Decisions Involving Alternative Choices

Structure:

13.1 Introduction
Objectives
13.2 Cost Identification for Decision Making
13.3 Differential (Incremental) Analysis
13.4 Types of Decision Situations
13.5 Make or Buy Decisions
13.6 Addition or Discontinuation of a Product Line
13.7 Sell or Process Further
13.8 Operate or Shutdown
13.9 Exploring New Markets
13.10 Maintaining a Desired Level of Profit
13.11 Summary
13.12 Glossary
13.13 Terminal Questions
13.14 Answers
13.15 Case Study

13.1 Introduction

In the previous unit we learnt the principles of marginal costing and CVP analysis. Both are useful tools for the management because of their applications. They are used in providing assistance to the management in decision-making, particularly in short-term operational decisions.

In this unit, we shall understand various such applications of the principles of marginal costing and CVP analysis in business decisions.

Objectives:

After studying this unit, you should be able to:

- explain the steps involved in decision making process
- assess various types of decision situations
- analyse and interpret various decision situations
- evaluate the alternative courses of actions based on marginal costing principle

- make recommendations in various decision situations based on the evaluation

13.2 Cost Identification for Decision Making

"Decision making involves the act of selecting one course of action from among various feasible alternatives available."

– Khan and Jain

The decisions may be:

- *Long-term decisions* – The long-term decisions are non-routine types of decisions. They involve huge investments and at the same time they involve much uncertainty.
- *Short-term decisions* – The level of uncertainty in short-term decisions is relatively lesser. The type of information required for decision-making depends upon the decision situation under consideration.

In this unit the focus is on the short-term decisions. They are also popularly called "operating decisions".

The information required for such decision-making is called "relevant data". The relevant data is obtained from the accounting information with or without modification.

There is a whole gamut of data that is relevant for decisions like production related information, demand related information, sales related information, technical information, legal implications, market related information, availability of inputs, etc.

In addition to all these, the data related to costs are also important. In fact, some of the above aspects like production, technical information etc are finally crystal down to costs. Hence, a thorough analysis of the complete set of costs that is either affected by the decision or affects the decision is required.

In this context, we should first be clear about the relevant costs and irrelevant costs. Costs that are either affected by the decision or affect the decision are called relevant costs. Costs that are neither affected by the decision nor affect the decision are called irrelevant costs.

Given below is a list of relevant costs.

- ***Opportunity costs*** – These are the monetary benefits foregone for not pursuing the alternative course. When a decision to follow one course of action is made, the opportunity to pursue some other course is foregone.
- ***Avoidable costs*** – These costs can be avoided in the future as a result of managerial choice. It is also known as discretionary costs. These costs are relevant in decision making.
- ***Incremental/Differential costs*** – These costs include variable costs and additional fixed costs resulting from a particular decision. They are helpful in finding out the profitability of increased output and give a better measure than the average cost.

Given below is an irrelevant cost.

- ***Sunk costs (committed costs)*** – These historical costs cannot be recovered in a given situation. These costs are irrelevant in decision making.

It is important to note in this context that the distinction between relevant and irrelevant is with respect to a specific decision on hand. A cost which may be irrelevant for some decision may be a relevant cost for some other decision.

13.3 Differential (Incremental) Analysis

Differential analysis is the process of estimating the consequences of alternative actions that a decision maker may take. In this method, only the change (difference/increment) due to implementing of a decision is analysed.

For example, let us assume that a company's present total sales is Rs.1,85,000 and the present total cost is Rs.1,45,000. The company is contemplating to open another sales outlet to increase the sales. The estimates show that the total sales will be Rs.3,50,000 and the total cost will be Rs.2,75,000.

The incremental analysis is done as shown.

	Before opening the sales outlet Rs.	**After opening the sales outlet Rs.**	**Change (increment) Rs.**
Total sales	1,85,000	3,50,000	1,65,000
Total cost	1,45,000	2,75,000	1,30,000
Profit	40,000	75,000	35,000

Incremental analysis is used both for short-term and long-term decisions. Short-term decisions relate to fixing price for the product, selecting a suitable product mix, diversifying the product, etc. Long-term decisions deal with capital budgeting decisions.

Self Assessment Questions

1. Relevant costs are costs that would __________as a result of the decision.
2. ____________ are historical cost that cannot be recovered in a given situation.
3. Opportunity costs are __________________ for not pursuing the alternative course.
4. _____________ is also known as discretionary cost.
5. Identify the relevant costs and irrelevant costs with respect to the decision on increasing the capacity utilisation level from 60% to 70%.
   a. Power consumption
   b. Labour/wages
   c. Salary of the administration manager
   d. Raw materials
   e. Rent of the factory building
   f. Showroom expenses
   g. Director’s fees
   h. Depreciation on plant
   i. Depreciation on factory building
   j. Auditor’s fees

Activity 1:
RD International ltd. wants to replace an old machinery with a new one for a certain process. List down the possible relevant and irrelevant costs.

Solution to Activity 1

Relevant costs
Costs of operating the machinery like the wages of technical personnel, maintenance expenses like lubricants, cost of extra space occupied by the machinery, cost of disposing the old machinery, and additional (incremental) depreciation on the machinery.

Irrelevant costs
Fixed operating overheads like administrative staff salaries.

13.4 Types of Decision Situations

The application of incremental or differential costs and revenues for decision making is known as decision situations or types of choice decisions. Such decisions are called “operational decisions”.

In particular, the CVP analysis (marginal costing) is a useful tool for the management with respect to the following operational decisions.

- Product planning
- Activity planning
- Profit planning
- Make or buy
- Purchase or lease
- Shutdown or continue
- Replacement decision
- Product mix decision
- Sales mix decision
- Promotion mix decision
- Channel selection
- Fixing price
- Performance evaluation
- Budgeting

- Capacity utilisation
- Effect of change in price
- Diversification of products
- Alternative course of action
- Retain or replace
- Change or status quo
- Export or local sales
- Expand or contract
- Take or refuse order
- Place or accept special orders
- Select sales territories
- Sell at split-up point or process further

We shall pick some examples from the above to understand the application of marginal costing principle to evaluate the alternative courses of action and to make a decision.

13.5 Make or Buy Decisions

Make or buy decisions arise when a company with unused production capacity considers the following alternatives:

(a) To buy certain raw materials or subassemblies from outside suppliers
(b) To use available capacity to produce the items within the company

Illustration 1: The Anchor Company Ltd. produces most of its electrical parts in its own plant. The company is at present considering the feasibility of buying a part from an outside supplier for Rs.4.50 per part. If this is done, monthly costs would increase by Rs.1,000.

The part under consideration is manufactured in department 1 along with numerous other parts. On account of discontinuing the production of this part, department 1 would have somewhat reduced operations. The average monthly usage production of this part is 20,000 units. The costs of producing this part on per unit basis are as follows.

Material	Rs. 1.80
Labour (half-hour)	2.40
Fixed overheads	0.80
Total costs	**5.00**

Should the company produce this part or should it buy from an outside supplier?

Solution:

Decision Analysis

Particulars	Costs of Making		Costs of Buying	
	Total	**Per unit**	**Total**	**Per unit**
Relevant costs:				
Materials (20000 units)	36,000	1.80	-	-
Labour	48,000	2.40	-	-
Purchasing cost (20000 units)	-	-	90,000	4.50
Additional cost of purchasing from outside	-	-	1,000	0.05
	84,000	4.20	**91,000**	4.55
Differential costs	7,000 per month			
Favouring making of the parts	0.35 per unit			

The company should continue the practice of producing the part in department 1.

13.6 Addition or Discontinuation of a Product Line or Process

The decision to add or eliminate an unprofitable product is a special case of product profitability evaluation. When a firm is divided into multiple sales outlets, product lines, divisions, or departments, it may have to evaluate individual performance to decide whether to continue operations of each of these segments or not.

Illustration 2: The Hi-tech Manufacturing Company is presently evaluating two possible processes for the manufacture of a toy. The following information is available:

Particular	Process A Rs.	Process B Rs.
Variable cost per unit	12	14
Sales price per unit	20	20
Total fixed costs per year	30,00,000	21,00,000
Capacity (in units)	4,30,000	5,00,000
Anticipated sales (next year, in units)	4,00,000	4,00,000

Suggest:

i. Which process should be chosen? Substantiate your answer.

ii. Would you change your answer as given above if you were informed that the capacities of the two processes are as follows: A 6,00,000 units; B 5,00,000 units? Why? Substantiate your answer.

Solution:

Comparative Profitability Statement

1. Which process should be chosen?

Particulars	Process A Rs.	Process B Rs.
(i) Selling price per unit	20	20
Variable cot per unit	12	14
Contribution per unit	8	6
Total annual contribution (as per anticipated sales)	32,00,000	24,00,000
Total fixed costs per year	30,00,000	21,00,000
Total income	2,00,000	3,00,000
Process B may be chosen		
Total contribution (if utilised to present capacity and sold)	34,40,000	30,00,000
Less : Fixed costs	30,00,000	21,00,000
Total Income	**4,40,000**	**9,00,000**

Note: While evaluating two possible processes, fixed cost should be considered.

Inference: Process B is preferred because total income as per anticipated sales and production is more from Process B than from Process A.

2. If the capacities of both the processes are changed, the choice would be:

Particulars	Process A	Process B
Contribution per unit (as detailed above)	8	6
(ii) Total contribution (if capacity of A of 6,00,000 units and of B 5,00,000 units)	48,00,000	30,00,000
Less : Fixed costs	30,00,000	21,00,000
Total income	18,00,000	9,00,000

Inference: Process A is preferred because total income from Process A is more than that of Process B

Illustration 3: Assume a company is considering dropping product B from its line because accounting statement shows that product B is being sold at a loss.

Product	Income Statement			
	A	**B**	**C**	**Total**
Sales revenue	50,000	7,500	12,500	70,000
Cost of sales:				
D. material	7,500	1,000	1,500	10,000
D. labour	15,000	2,000	2,500	19,500
Indirect manufacturing cost (50% of Direct labour)	7,500	1,000	1,250	9,750
Total	**30,000**	**4,000**	**5,250**	**39,250**
Gross margin on sales	20,000	3,500	7,250	30,750
Selling and Admn	12,500	4,500	4,000	21,000
Net income	**7,500**	**(1,000)**	**3,250**	**9,750**

Additional information:

a) Factory overhead cost is made up of fixed cost of Rs. 5850 and variable cost of Rs. 3900.
b) Variable cost by products are: A – Rs. 3000, B – Rs. 400, and C – Rs. 500.
c) Fixed costs and expense will not be changed if product B is eliminated.
d) Variable selling and administrative expenses to the extent of Rs. 11000 can be traced to the product: A - Rs.7,500, B - Rs.1500, and C - Rs. 2000.
e) Fixed selling and administration expense are Rs. 10000.

Solution:

Product	Income Statement			
	A	B	C	Total
Sales revenue	**50,000**	**7,500**	**12,500**	**70,000**
Less V.C				
D. Material	7,500	1,000	1,500	10,000
D. Labour	15,000	2,000	2,500	19,500
Factory overhead	3,000	400	500	3,000
Selling and administration cost	7,500	1,500	2,000	11,000
Total	**33,000**	**4,900**	**6,500**	**44,400**
Contribution	**17,000**	**2,600**	**6,000**	**25,600**
Less: Fixed cost				
Factory overhead				5,850
Selling and administration overhead				10,000
Total fixed cost				15,850
Net income				9,750

If the sale of product B was discontinued, the marginal contribution would be lost and the net income would be reduced by Rs.2,600.

Assume that after dropping product B, the sales of product A has increased by 10%. The total profit of the firm will not increase by this sales increase. Product A makes only a marginal contribution of 34% (17000/50000).

Sales revenue of product A	50000	100%
Variable cost of product A	33000	66%
Marginal contribution of product A	17000	34%

On additional sales of Rs.5000, the marginal contribution would be Rs.1700.

Sales revenue 10% of 50000	5000
Variable cost 66%	3300
Marginal contribution (34%)	1700

This contribution is less than Rs.2,600 now being realised on the sales of product B. It would take additional sales of product A of approximately Rs.7,647 to equal the marginal contribution of Rs.2,600 now being made by product B:

$$\frac{\text{Marginal contribution of product B}}{\text{Marginal contribution of product A}} = \frac{2,600}{34\%} = \text{Rs.}7,647$$

It is possible that the dropping of product B may result in reduction in some of the fixed costs. Product B now contributes Rs.2,600 towards recovery of fixed costs and expenses. Only if the fixed costs and expenses can be reduced by more than this amount, it is advisable to drop product B.

13.7 Sell or Process Further

A firm is frequently faced with the problem of continuing the existing policies or plans or change to new ones. Such change can be in the form of selling a partially processed product (semi-finished) or process further. While taking a decision about such matters, the management must keep in mind the long-term consequence and the interest of the firm.

Illustration 4: A firm sells semi-finished products at Rs. 9 per unit. The cost to manufacture the semi-finished product is Rs.6. Further processing can be done at an additional cost of Rs.3 per unit and the final product can be sold at Rs.15 per unit. The firm can produce 10,000 units. The analysis is shown below:

	Sell	**Process & Sell**
Sales revenue (10,000 units)	Rs. 90,000	1,50,000
Less : Manufacturing costs	60,000	90,000
Profit	30,000	60,000

There is a net advantage of Rs.30,000 in processing the product further. The market value of the partially processed product (Rs.90,000) is considered to be the opportunity cost of further processing. The net advantage of Rs. 30.000 can be arrived at in the following manner also:

Revenue from sale of final product (10,000 x 15)		Rs.1,20,000
Less : Additional processing cost (10,000 x 3)	30,000	
Revenues from sale of intermediate product	90,000	1,20,000
Net advantage in further processing		Rs.30,000

13.8 Operate or Shutdown

Various factors both external and internal affect the functioning of a firm. In such situations, it becomes necessary for a firm to temporarily suspend or shutdown the activities of a particular product, department, or a unit as a whole.

Illustration 5: A company operating below 50% of its capacity expects that the volume of sales will drop below the present level of 10,000 units per month. The management is concerned that a further drop in sales volume will create a loss and has under consideration a recommendation that operation be suspended, until better market conditions and selling price prevail. The present operation income statement is as follows:

	Rs.	Rs.
Sales revenue (10,000 units @ Rs.3.00)		30,000
Less : Variable costs @ Rs.2.00 per unit	20.000	
Fixed costs	10,000	
Net income		0

Find the profit/loss status for production levels of shutdown option, 2000 units, 4000 units, 6000 units, 8000 unit, and 10000 units

Solution:
The following income statements have been prepared for sales at different capacities:

Units Produced

Units	Shut down	2,000	4,000	6,000	8,000	10,000
Sales revenue @ Rs. 3	0	6,000	12,000	**18,000**	24,000	30,000
Variable costs @ Rs. 2	0	4,000	8,000	**12,000**	16,000	20,000
Contribution	0	2,000	4,000	**6,000**	8,000	10,000
Fixed costs	4,000	10,000	10,000	**10,000**	10,000	10,000
Loss	(4,000)	(8,000)	(6,000)	**(4,000)**	(2,000)	0

Inference: It would appear that the shutdown is desirable when the sale volume drops below 6,000 units per month, the point at which operating losses exceed the shutdown cost.

13.9 Exploring New Markets

Decisions regarding entering new markets whether within or outside the country should be taken after considering the following factors:

- Whether the firm has surplus capacity to meet the new demand?
- What price is being offered by the new market?
- Whether the sale of goods in the new market will affect the present market for the goods?

Illustration 6: The following figures are obtained from the budget of a company, which is at present working at 90% capacity and producing 13,000 units per annum.

	90% Rs.	**100% Rs.**
Sales	15,00,000	16,00,000
Fixed expenses	3,00,500	3,00,600
Semi- fixed expenses	97,500	1,00,500
Variable overhead expenses	1,45,000	1,49,500
Units made	13,500	15,000

Labour and material costs per unit are constant under present conditions. Profit margin is 10%.

a) You are required to determine the differential cost of producing 1,500 units by increasing the capacity to 100%.

b) What export price would you recommend for these 1,500 units, considering that the overseas prices are much lower than indigenous prices?

Solution:

Basic Calculation

	Rs.
Sales at 90% capacity	15,00,000
Less: Profit 10%	1,50,000
Cost of goods sold	13,50,000
Less : Expenses (fixed, semi-variable, and variable)	5,43,000
Cost of material and labour	8,07,000
Labour and material at 100% capacity	Rs.8,07,000 x 100/90
	8,96,667

Differential cost analysis can now be done as follows:

Capacity levels	**90%**	**100%**	**Differential cost**
Production (units)	13,500	15,000	1,500
Material and labour	8,07,000	8,96,667	89,667
Variable overhead expenses	1,45,000	1,49,500	4,500
Semi-variable expenses	97,500	1,00,500	3,000
Fixed expenses	3,00,500	3,00,600	100
	13,50,000	14,47,267	97,267

a) Differential Cost = Rs.97,267 (Rs.14,47,267 – 13,50,000)

b) Minimum price for export = $\frac{\text{Rs.97,267}}{\text{1,500}}$ = Rs.64.84 per unit

At this price, there is no addition to revenue; any price above Rs.64.84 per unit may be acceptable.

Note: It has been presumed that:

1) No capital investment is necessary
2) No export charges are incurred
3) The export price will have no effect on the home market where the product will continue to be sold at the old price. It has also been assumed that the necessary precaution be taken to ensure that the product is not 'dumped back'.

13.10 Maintaining a Desired Level of Profit

When deciding between alternative courses of actions, the criterion should be to select the project that yields the greatest contribution.

Illustration 7: A company is considering expansion. Fixed costs amount to Rs. 4,20,000 and are expected to increase by Rs.1,25,000 when the expansion is completed. The present plant capacity is 80,000 units a year. Capacity will increase by 50% with the expansion. Variable costs are currently Rs.6.80 per unit and are expected to go down by Rs.0.40% with the expansion. The current selling price is Rs.16 per unit and is expected to remain same under either alternative. What are the break-even points under either of the alternatives? Which alternative is better and why?

Solution:

Statement of Comparative Profitability

Particulars	**Present**		**After expansion**	
Production and Sales	**80,000**		**1,20,000**	
	Per Unit	**Amount**	**Per Unit**	**Amount**
Sales	16.00	12,80,000	16.00	19,20,000
Variable costs	6.80	5,44,000	6.40	7,68,000
Contribution	9.20	7,36,000	9.60	11,52,000
Fixed cost		4,20,000		5,45,000
Profit		3,16,000		6,07,000

BEP (units) = $\frac{\text{Fixed costs}}{\text{Contribution per unit}}$

BEP Before expansion

= $\frac{4,20,000}{9.20}$

= 45.652 units

BEP after expansion

= $\frac{5,45,000}{9.60}$

= 56771 units

The profitability after expansion is very good and hence it is better to expand.

Illustration 8: Disposal of inventories

ABC Ltd. has 5,000 units of a product on hand that cannot be sold through regular sales. These were produced at a total cost of Rs.1,50,000 and would normally have been sold for Rs.40 per unit. The following three alternatives are being considered.

i. Sell the items as scrap for Rs.2 per unit
ii. Repackage at a cost of Rs.20,000 and sell them at Rs.8 per unit
iii. Dispose them off at the city dump at a removal cost of Rs.500.

Which alternative should be accepted?

Solution:

Decision Analysis

	Alternatives		
Particulars	**(I) Sell as scrap**	**(II) Repackage and sell**	**(III) Disposal**
Sales revenue	Rs.10,000	Rs.40,000	-
Less costs:			
Repackage cost	-	20,000	-
Removal cost	-	-	500
Contribution (loss)	10,000	20,000	(500)

Alternative II should be accepted.

Self Assessment Questions

6. Opportunity costs are ____________ .
   a. Out of pocket cash costs
   b. Relevant costs
   c. Irrelevant costs
7. Costs incurred in selecting a site for construction is ____________ .
   a. Out of pocket cash costs
   b. Relevant costs
   c. Irrelevant costs
8. The costs that affect a decision are called ____________ .
   a. Out of pocket cash costs
   b. Relevant costs
   c. Irrelevant costs
   d. Sunk costs
9. In differential analysis, ________ costs are analysed.
   a. Total
   b. Variable
   c. Additional
10. Sunk costs are ____________ .
    a. Out of pocket cash costs
    b. Relevant costs
    c. Irrelevant costs

11. Incremental costs consist of ___________ .
    a. Fixed costs only
    b. Variable costs only
    c. Both fixed costs and variable costs

13.11 Summary

Let us recapitulate the important concepts discussed in this unit:

- A decision involves selecting among various choices.
- Incremental or differential costs are costs that include variable costs and additional fixed costs resulting from a particular decision. The relevant and irrelevant costs with respect to the decision on hand need to be first identified.
- Normally the operating decisions are made on the basis of marginal costing principle, i.e., charging only the variable costs to the product.

13.12 Glossary

***Avoidable (discretionary) costs*:** Costs that can be avoided in the future as a result of managerial choice.

Irrelevant costs: **Costs that are not affected by a decision or course of action.**

Opportunity costs: Monetary benefits foregone for not pursuing the alternative course.

Relevant costs: Costs that would change as a result of the decision.

Sunk costs: Historical costs that cannot be recovered in a given situation.

13.13 Terminal Questions

1 Avon Garments Ltd. manufactures readymade garments and uses its cut-pieces of cloth to manufacture dolls. The following statement of cost has been prepared.

Particulars	Readymade garments	Dolls	Total
Direct material	Rs.80,000	Rs.6,000	Rs.86,000
Direct labour	13,000	1,200	14,200
Variable overheads	17,000	2,800	19,800
Fixed overheads	24,000	3,000	27,000
Total cost	1,34,000	13,000	1,47,000
Sales	1,70,000	12,000	1,82,000
Profit (loss)	36,000	(1,000)	35,000

The cut-pieces used in dolls have a scrap value of Rs.1,000 if sold in the market. As there is a loss of Rs.1,000 in the manufacturing of dolls, it is suggested to discontinue the manufacturing. Advise the management.

2. The ABC Company Ltd. produces most of its own parts and components. The standard wage rate in the parts department is Rs.3 per hour. Variable manufacturing overheads is applied at a standard rate of Rs.2 per labour hour and fixed manufacturing overheads are charged at a standard rate of Rs.2.50 per hour.

   For its current year's output, the company will require a new part. This part can be made in the parts department without any expansion of existing facilities. Nevertheless, it would be necessary to increase the cost of product testing and inspection by Rs.5,000 per month. Estimated labour time for the new part is half an hour per unit. Raw materials cost has been estimated at Rs.6 per unit.

   The alternative choice before the company is to purchase the part from an outside supplier at Rs.9 per unit. The company has estimated that it will need 2,00,000 new parts during the current year.

   Advise the company whether it would be more economical to buy or make the new parts. Would your answer be different if the requirement of new parts was only 1,00,000 parts?

3. The annual budget of ABC Ltd. at 60% and 80% level of performance is as under.

Particulars	60% Rs. ('000)	80% Rs. ('000)
Direct material	360	480
Direct labour	480	640
Production OHs	252	276
Administration OHs	124	132
Selling and distribution OHs	136	148
	1352	1676

The company is experiencing difficulties in selling its products and at present the capacity level is 50%.

Sales revenue for the year is estimated to be Rs.9,90,000. The Directors are seriously considering suspending operations till the market picks up.

Market research undertaken by the company reveals that in about 12 months, the sales will pick up and the company can comfortably operate at 75% level of performance. and earn sales income of Rs.18 lakh in that year.

The sales personnel of the company do not want to suspend operations for the fear of adverse reactions in the market, but the directors want to decide the issue purely on financial considerations.

If the manufacturing and other operations of the company are suspended for a year, it is estimated that:

1. The present fixed costs could be reduced to Rs.2,20,000 p.a.
2. The settlement cost of personnel not required would amount to Rs.1,50,000.
3. The maintenance of plant has to go on and that would cost Rs.20,000 p.a.
4. On resuming operations, the expenditure connected with reopening after the shut down would amount to Rs.80,000.

Submit a report to the Directors and indicate whether it would be advisable to suspend the company's operations in the current year or not. It must be based purely on financial considerations.

13.14 Answers

Self Assessment Questions

1. Change
2. Sunk cost
3. Monetary benefits foregone
4. Avoidable cost
5. a. relevant
   b. relevant
   c. irrelevant
   d. relevant
   e. irrelevant
   f. irrelevant
   g. irrelevant
   h. relevant if depreciation is charged based on usage, irrelevant if depreciation is charged based on time.
   i. irrelevant
   j. irrelevant
6. b
7. a
8. b
9. c
10. c
11. c

Terminal Questions

1. Discontinue manufacturing of dolls

	Readymade garments	Dolls	Total
Total cost	**134000**	**13000**	**147000**
Profit (loss)	**36000**	**(1000)**	**35000**

2. Decision analysis
   200000 units – The company is advised to make the new part. The differential costs favouring the decision of making the component is Rs.40000

Decision analysis

100000 units – The company is advised to buy from an outside supplier. Total cost to manufacture 100000 units is Rs.9,10,000.

3. **Decision analysis**

Particulars	Operate the factory (at 50%)	Shutdown the factory
Sales revenue	9,90,000	-
Less: variable costs		
Direct material	3,00,000	-
Direct labour	4,00,000	-
Variable OHs		
Production OHs	60,000	-
Administration OHs	20,000	-
Selling and distribution OHs	30,000	-
Contribution	1,80,000	-
Less: Fixed costs		2,20,000
Production OHs	1,80,000	
Administration OHs	1,00,000	
Selling and distribution OHs	1,00,000	
Settlement cost (personnel)	-	1,50,000
Maintenance of the plant	-	20,000
Overhauling costs	-	80,000
Net income (loss)	(2,00,000)	(470000)

Recommendation:

Shutdown loss is higher. Therefore the company should continue operations.

Working notes:

Segregation of OHs into fixed and variable

	Total at		Difference for 20%	Difference for 1%	Total	
	60%	80%			Variable OHs at 60%	Fixed OHs
Production	252000	276000	24000	1200	72000	180000
Administration	124000	132000	8000	400	24000	100000
S&D	136000	148000	12000	600	36000	100000

13.15 Case Study

Budget

RD International Ltd. produces 20,000 units by operating at 60% of the capacity and sells at a price of Rs.30 per unit. The budgeted figures for the year 2008 are as follows:

Statement of Cost
(20,000 units)

	Total Rs.	Per unit Rs.
Raw materials @ 4.25	85,000	4.25
Direct labour @ Rs.5.75	1,15,000	5.75
Variable factory overhead @ Rs.7.75	1,55,000	7.75
Fixed factory overhead	1,25,000	6.25
Variable selling costs 2.75% of selling price		
Fixed selling and administrative costs	72,500	3.625
Total	552500	27.625

The company receives a special order for 10,000 units from a firm.

The company desires to earn a profit of Re.1.00 per unit and no selling expenses are to be incurred for the special order.

Discussion Questions:

(a) Prepare a statement showing pricing of the special order.

(b) Prepare a statement showing profit if the special order is accepted.

(c) What are the precautions that the company should take if it wants to accept this special order?

(d) Suppose the customer of the special order wants a price of (i) Rs.18 per unit (ii) Rs.17 per unit, can the order be accepted? Substantiate your recommendations with explanations.

Source: Raman, B. S., Management Accounting, United Publishers

Solution to the case study

(a)

Pricing of Special Order

	(10,000 units) Rs.
Variable costs to be incurred:	
Raw materials	4.25
Direct labour	5.75
Variable overhead	7.75
Variable cost per unit (no selling expenses)	
Desired profit	17.75
Minimum price	1.00
Increase in sales = 10,000 units x Rs.1,87,500	18.75

(b)

Income Statement

	Without special order (Rs.)	**Special order (Rs.)**	**With special order (Rs.)**
Sales	6,00,000	1,87,500	7,87,500
Less: Variable costs:			
Raw materials	85,000	42,500	1,27,500
Direct labour	1,15,000	57,500	1,72,500
Variable factory overhead	1,55,000	77,500	2,32,500
Variable selling costs (2.75% of selling price)	16,500		16,500
Total variable costs	3,71,500	1,77,500	5,49,000
Less: Fixed costs:			
Fixed factory overhead	1,25,000	___	1,25,000
Fixed selling and administrative costs	72,500	___	72,500
Total fixed costs	1,97,500	___	1,97,500
Total costs	5,69,000	1,77,500	7,46,500
Net income before taxes	31,000	10,000	41,000

(c) From the above analysis, it is clear that the acceptance of the special order will increase the profit by Rs.10,000. Also the bid price (Rs.18.75) is significantly less than the normal price of Rs.30. However, before arriving at a proper decision, the management should consider factors

other than just the immediate impact on income. An important point is the effect on regular customers. If regular customers are paying more for the products, they may demand price reduction or quit buying from the firm and seek another source of supply. Another consideration is the possibility of special order customers being the regular customers.

(d) The price of Rs.18 per unit may be accepted as it is above the marginal cost per unit of Rs.17.75 and the company will make an additional profit of Rs.0.25 per unit and a total additional profit of Rs.2500 (i.e., Rs.0.25 per unit x10000 units).

However the price of Rs.17 per unit cannot be accepted as it is below the marginal cost per unit of Rs.17.75 and the company will face a loss of Rs.0.75 per unit. This reduces the total profit by Rs.7500 (i.e., Rs.0.75 per unit x10000 units).

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Unit 14 Budgetary Control

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14.1 Introduction

In the previous unit we learnt about decisions involving alternative choices and making or buying decisions. It is important to understand budgetary control while considering buying decisions which we will be studying in this unit.

In a competitive environment, profitability depends upon the extent to which the management has followed proper planning, effective coordination, and dynamic control. The procedure for preparing a plan with respect to the future financial and physical requirements is called “budgeting”. It is a

forward planning exercise. It involves the preparation in advance of the quantitative as well as the financial statements to indicate the intention of the management with respect to the various aspects of business. In this unit, we shall understand the uses, types, and the process of budgeting in business organisations.

Objectives:

After studying this unit, you should be able to:

- explain the meaning of budget and budgetary control
- appreciate budgetary control as a tool of management planning and control
- explain the processes involved in the preparation of budgets and implementation of budgetary control
- explain the various classifications of budgets
- prepare cash budget and flexibles
- appreciate the utility of Zero Based Budgeting (ZBB) as a tool of cost control

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14.2 Definitions

Let us understand the definitions of some basic terminologies before going ahead.

14.2.1 Budget

"A budget is a financial and/or quantitative statement, prepared prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective."

– Chartered Institute of Management Accountants (CIMA) London

The following points are clear from the definition.

- A budget is a pre-determined statement. The targets for a period are set in advance.
- The methodologies to be adopted for achieving those targets are also determined in advance.

Thus a budget sets a standard for performance. At the end of the period (or at regular intervals) the actual performance is compared with the targets (budgeted performance level).

14.2.2 Budgeting

"The entire process of preparing the budgets is known as budgeting."

– J. Batty

In other words, budgeting is the act of preparing budgets. It includes the processes involved in obtaining the inputs for drafting the final budget statement. In other words, all efforts involved in developing, obtaining, and processing the data or information are essential parts of the budgeting process.

14.3 Budgetary Control

"Budgetary control is the establishment of budgets relating to the responsibilities of executives of a policy and the continuous comparison of the actual with the budgeted results, either to secure by individual action the objective of the policy or to provide a basis for its revision."

– CIMA

14.4 Objectives of Budgetary Control

The objectives of budgetary control are as follows:

- To conform to good business practices by planning for the future.
- To coordinate with the various divisions of a business.
- To establish divisional and departmental responsibilities.
- To forecast operating activities and financial position.
- To operate most efficiently the divisions, departments, and cost centre.
- To avoid waste, reduce expenses and to obtain the income desired.
- To obtain more economical use of capital available for the efficient operation.
- To provide more definite assurance of earning the proper return on the capital employed.
- To centralise management control.
- To show the management where action is needed to remedy a situation.
- To help in controlling cash.
- To help in obtaining better inventory control and turnover.

Self Assessment Questions

1. Budgets are not actual but ______.
2. After setting up objectives in terms of plans, it becomes imperative to organise the factors of production to convert into a ____________ and ______________.
3. _______signifies such systematic efforts, which help the management to know whether actual performance is in line with the predetermined goal, policy, and plans.
4. Internal refinement, broad indexation of activities, and concentrated details are the essential features of _______.

14.5 Merits of Budgetary Control

The merits **of budgetary control** are as follows:

1. It aims at the maximisation of profits.
2. Budgets fix the goals and targets without which operations lack direction.
3. It reduces the cost and eliminates inefficiencies.
4. It facilitates to make ordered effort and brings about overall efficiency in the results.
5. It ensures that the capital employed at a particular level is kept at a minimum level.
6. It enables the management to decentralise responsibility without losing control.
7. It is a good guide to the management for making future plans. Based on budgetary control, realistic budgets can be drawn.
8. It facilitates an intelligent and planned forecast of the future.
9. It acts as a safety signal for the management. It prevents all types of wastages.
10. It brings to light the inefficiencies and weaknesses on comparing actual performance with the budget. Management can take timely remedial measures.
11. It avoids financial crisis since budget provides advance information.
12. It is a guide to the management in the field of research and development in the future.

14.6 Essential Features of Budgetary Control

An effective budgeting system should have essential features to get the best results. In this direction, the following may be considered as essential features of an effective budgeting.

- ***Business policies defined –*** The top management of an organisation should have an action plan for every activity and department. Every budget should reflect the business policies formulated from time to time. The policies should be precise, clearly defined, and the same must be communicated to the persons involved in the execution.
- ***Forecasting –*** Business forecasts are the foundation of budgets. Time and again, discussions should be arranged to derive the most profitable combinations of forecasts. As far as possible, quantitative techniques should be used while forecasting
- ***Formation of budget committee –*** A budget committee is a group of representatives of various important departments in an organisation. The functions of the committee should be specified clearly. The committee plays a vital role in the preparation and execution of the budget estimated. It brings co-ordination among other departments. It aids in the finalisation of policies and programs. Non-financial activities are also considered to make it a wholesome affair.
- ***Accounting system –*** To make the budget a successful document, there should be proper flow of accurate and timely information. The accounting adopted by the organisation should be proper and must be fine-tuned from time to time
- **Organisational efficiency –** To make the budget preparation and its subsequent implementation a success, an efficient, adequate and the best organisation is necessary. A budgeting system should always be supported by a sound organisational structure. There must be a clear cut demarcation of lines of authority and responsibility. There must also be a delegation of authority from top to bottom line.
- ***Management philosophy –*** Every management should set a healthy philosophy while opting for the budget. Management must wholeheartedly support the activities which develop a budget. Encouragement should flow from the top management. All the members

must be involved to make it a workable preposition and a dream-driven document.

- ***Reporting system –*** Proper feedback system should be established. Provision should be made for corrective measures whenever comparative measures are proposed.
- ***Availability of statistical information –*** Since budgets are always prepared and expressed in quantitative terms, it is essential that sufficient and accurate relevant data is available to each department.
- **Motivation –** Since budget acts as a mirror, the entire organisation should become smart in its approach. Every employee, both executive and non-executive should be a part of the overall exercise. Employees should be persuaded than pressurised to appreciate the benefits of the budgets so that the fruits can be shared by all the members of the organisation.

Self Assessment Questions

5. Budgetary control acts as a ________ for the management. It prevents wastages of all types
6. Business forecasts are the foundation of ________
7. __________ must wholeheartedly support the activities that develop a budget.

14.7 Steps in Budgetary Control

The procedure to be followed in the preparation and control of budget may differ from business to business. But, a general pattern of outline of budget preparation and control may go a long way to achieve the end results. The steps are as follows:

1) ***Formulation of policies –*** The business policies are the foundation stone of budget construction. Function policies should be formulated in advance. Long-range policies with short-term projections should be made for the functional areas such as sales, production, inventory, cash management, capital expenditure.
2) ***Preparation of forecasts –*** Based on the formulated policies, forecasts should be made with respect to each function. Activity based concepts should be introduced at the micro level for each function. Forecasts

should not be considered as mere estimates. Scientific methods should be adopted for forecasting. Analysis of various factors should be made based on past, present, and future forecast.

3) ***Preparation of budgets* –** Forecasts are converted into written codified documents. Such written documents can be used for co-ordination purposes. Function budgets will act as guidelines for implementation.

4) ***Forecast combinations* –** While developing budgets through a master budget, various permutation and combination processes are considered and developed. Based on this, establishment of the most preferred one which will yield optimum benefits should be considered. All the factor components should be identified which are likely to cause disturbances while implementing the budgets.

14.8 Classification of Budgets

Budgets may be classified based on various criteria. From a utility point of view, it is important to understand these classifications.

14.8.1 Functional classification of budgets

Functional budget

These are also known as subsidiary budgets. These are prepared on the basis of approved forecasts for individual department. Since departments are created based on the functions, they are known as functional budgets. The functional budgets may vary in number from business to business. The functional budgets include sales budget, production budget, selling and distribution overhead budget, plant budget, research and development budget, overheads budget, financial budget such as cash budget and capital expenditure budget.

14.8.2 Based on time

Based on the time horizon, budgets are classified as follows:

1. **Short-term budgets**

   These budgets involve a time frame of up to one year. Budgets like production budgets and cash budgets are prepared for one year or less.

2. **Medium-term budgets**

   These budgets involve a time frame of two to three years. Budgets like plant utilisation or capacity utilisation, HR training, etc. require this kind of time frame.

3. **Long-term budgets**
   These budgets involve a time frame of more than three years. Budgets like increasing the plant capacity, expansion diversification, R&D, etc. require this kind of time frame.

14.8.3 Based on flexibility

Based on their nature, budgets are classified as follows:

(a) Fixed budget
(b) Flexible budget

Fixed budget

A fixed budget is defined as a budget "*which is designed to remain unchanged irrespective of the level of activity actually attained*".

It is also known as static budget. It is prepared for a fixed or standard volume of activity. They do not change with the change in volume of the activity. They are prepared well in advance and hence there are variances at the time of comparison. Hence, the budget targets become unsuitable for the purpose of comparison. Wide deviations are noticed due to the changes in the volume of activity.

Flexible budget

A flexible budget is defined as a budget "*which is designed to change in relation to the level of activity actually attained*".

It is prepared with a view to take into account the periodic changes in the level of activity attained. In this case, the revenues and costs targets are set with respect to different levels of activity say from 0 to 100% of the production volume. Such mechanism helps to change revenues and cost targets for the actual level of activity and thus makes the comparison more logical and scientific.

Self Assessment Questions

8. ______ is also known as static budget because it is prepared for a fixed or standard volume of activity.
9. Types of budgets are _____________.
10. In _______ budget, the revenues and costs targets are set with respect to different levels of activity say from 0 to 100% of the production volume.

14.9 Cash Budget

Cash budget shows the expected cash receipts, payments, and the closing balance of cash for the budget period. It is a short-term budget, prepared for a period of less than one year, usually quarterly. It may further be split into monthly or weekly cash receipts and payments.

The various receipts of cash are:

1. Opening balance of cash in hand and cash at bank
2. Cash sales
3. Collection from debtors to whom sales are effected on credit basis
4. College from bills received
5. Interest and advances and loans granted
6. Dividends received from investments
7. Sale proceeds from capital assets
8. Proceeds from issue of shares and debentures
9. Other sources

After determining the various sources, the quantum of receipt should be estimated. Past analysis will help to identify the problem areas that affect collection of cash.

Illustration 1: A large retail store makes 25% of its sales for cash and the balance on 30 days net. Due to faulty collection practice, there have been losses from bad debts to the extent of 1% of credit sales on average in the past. The store experience suggests that normally 60% of the credit sales are collected in the month following the sale, 25% in the second following month, and 14 % in the third following month. Sales in the preceding three months (January, February, and March) have been Rs.80,000, Rs.1,00,000, and Rs.1,40,000. Sales for the next three months (April, May, and June) are estimated as Rs.1,50,000, Rs.1,10,000, and Rs.1,00,000. Prepare a schedule of projected cash collection.

Solution:

Statement of expected Cash Receipts

Collection form	**April**	**May**	**June**
Cash sales	37,500	27,500	25,000
Collection from Debtors :			
January	8,400	-	-
February	18,750	10,500	-
March	63,000	26,250	14,700
April	-	67,500	28,125
May	-	-	49,500
Total	**1,27,650**	**1,31,750**	**1,17,325**

Working Notes: Details of Cash and Credit Sales – monthwise

[Fig. in 000's Rs.]

	Jan		**Feb**		**Mar**		**Apr**		**May**		**June**	
Sales	80		100		140		150		110		100	
Cash 25%	20		25		35		37.50		27.50		25	
Cr. 75%		60		75		105		112.50		82.50		75

Details: Credit sales – monthwise realisation:

[Fig. in 000's Rs.]

Debtors 60:25:14	**Feb**			**Mar**			**Apr**			**May**			**June**		
Jan:60	36	-	-	-	15	-	-	-	8.4						
Feb:75	-	-	-	60	-	-	-	18.75	-	-	-	10.5	-	-	-
Mar:105	-	-	-	-	-	-	63	-	-	-	26.25	-	-	-	14.7
Apr:112.5	-	-	-	-	-	-	-	-	-	67.5	-	-	-	28.125	-
May:82.5	-	-	-	-	-	-	-	-	-	-	-	-	49.5	-	-

Forecasts of cash payments

The items of expenditures differ from business to business. The normal items which come under the lists are:

1. Cash purchases
2. Payment to creditors or suppliers
3. Payments to bills payable

4. Payment to employees in the nature of wages, salaries
5. Manufacturing, selling and distribution, and administration expenses
6. Repayments of bank loan and special obligations such as bonus, donations, and advances
7. Interest and dividend payments
8. Capital expenditures for acquiring assets of enduring benefit
9. Payment of tax liability
10. Other expenses of periodic nature

The quantum of amount likely to be spent on these items is generally determined with reference to functional budgets. The time lag affects the amount of expenditures to be incurred in a particular period. The formula adopted for the expenses payable in next month is:

Month's amount x Time lag

Illustration 2:

The following are the forecasts related to wages and factory expenses.

	July	Aug	Sept	Oct	Nov
Wages	32,000	32,000	32,000	40,000	32,000
Factory expenses	5,000	5,000	5,000	5,000	5,000

One eighth of wages and half of factory expenses are paid in the succeeding month. Estimate the amount of wages and factory expenses payable in September, October, and November.

Solution:

Statement showing the disbursements of cash

Particulars		Sept	Oct	Nov
Wages: Aug	32,000	4,000	-	-
Sept	32,000	28,000	4,000	-
Oct	40,000	-	35,000	5,000
Nov	32,000	-	-	28,000
		32,000	**39,000**	**33,000**
Factory expenses				
Aug	5,000	2,500	-	-
Sept	5,000	2,500	2,500	-
Oct	5,000	-	2,500	2,500
Nov	5,000	-	-	2,500
		5,000	**5,000**	**5,000**

Illustration 3:

The following information is provided with respect to Rashmi Ltd. Prepare a Cash budget for April, May, and June 2007.

Months	Details	Sales	Purchases	Wages	Expenses
Jan	Actual	80,000	45,000	20,000	5,000
Feb	Actual	80,000	40,000	18,000	6,000
March	Actual	75,000	42,000	22,000	6,000
April	Budget	90,000	50,000	24,000	7,000
May	Budget	85,000	45,000	20,000	6,000
June	Budget	80,000	35,000	18,000	5,000

Additional information:

a. 10% of the purchases and 20% of sales are in cash.

b. The average collection period of the company is 1/2 month and the credit purchases are paid regularly after one month.

c. Wages are paid half monthly and the rent of Rs.500 included in expenses is paid monthly. Other expenses are paid after one month lag.

d. Cash balance on April 1, 2007 may be assumed to be Rs.15,000.

Solution:

Cash Budget
For the month ending June 2007

Particulars	April	May	June
RECEIPTS			
Opening balance	15,000	27,200	35,700
Cash sales	18,000	17,000	16,000
Collection from debtors	66,000	70,000	66,000
Total say A	**99,000**	**1,14,200**	**1,17,700**
PAYMENTS			
Cash purchases	5,000	4,500	3,500
Payments to creditors	37,800	45,000	40,500
Wages	23,000	22,000	19,000
Rent	500	500	500
Other expenses	5,500	6,500	5,500
Total, say B	**71,800**	**78,500**	**69,000**
CLOSING CASH BALANCE, A – B	**27,200**	**35,700**	**48,700**

Illustration 4:

Hindustan Ltd. is to start production on 1st January, 2008. The prime cost of a unit is expected to be Rs.40 (Rs.16 per material and Rs.24 for labour). In addition, variable expenses per unit are expected to be Rs.8 and fixed expenses per month are Rs.30,000. Payment for materials is to be made in the month following the purchases. One-third of sales will be for cash and the rest on credit for settlement in the following month. Expenses are payable in the month in which they are incurred. The selling price is fixed at Rs.80 per unit. The number of units to be produced and sold is expected to be: January 900, February 1,200, March 1,800, April 2,000, May 2,100, and June 2,400. Draw a cash budget indicating cash requirements.

Solution:

Cash Budget

For six months ending 30th June

Particulars	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**
RECEIPTS						
Opening bal	-	(34,800)	(37,600)	(32,400)	(5,867)	27,600
Cash Sales	24,000	32,000	48,000	53,333	56,000	64,000
Collection from Debtors	-	48,000	64,000	96,000	1,06,667	1,12,000
A. Total	**24,000**	**45,200**	**74,400**	**1,16,933**	**1,56,800**	**2,03,600**
PAYMENTS						
Creditors	-	14,400	19,200	28,800	32,000	33,600
Wages	21,600	28,800	43,200	48,000	50,400	57,600
Variable Expenses	7,200	9,600	14,400	16,000	16,800	19,200
Fixed Expenses	30,000	30,000	30,000	30,000	30,000	30,000
B. Total	**58,800**	**82,800**	**1,06,800**	**1,22,800**	**1,29,200**	**1,40,400**
Closing Bal. **[A – B]**	(34,800)	(37,600)	(32,400)	(5,867)	27,600	63,200

Working Notes:

Particulars	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**
Sales [Units]	900	1,200	1,800	2,000	2,100	2,400
Sales [Rs.]	72,000	96,000	1,44,000	1,60,000	1,68,000	1,92,000
Cash Sales [Rs.] – 1/3	24,000	32,000	48,000	53,333	56,000	64,000

Illustration 5:

Ranjini Ltd. intends to approach her Bankers for temporary overdraft facility for three months from 1st June to 31st August, 2007. Prepare a cash budget for the above period.

Months	Sales	Purchases	Wages
April	3,60,000	2,49,600	24,000
May	3,84,000	2,88,000	28,000
June	2,16,000	4,86,000	22,000
July	3,48,000	4,92,000	20,000
Aug	2,52,000	5,36,000	30,000

(a) The entire sale is on credit basis out of which 50% is realised in the succeeding month and the balance in the second month following sales.

(b) Creditors are paid in the month following purchase.

(c) Estimated cash as on 1st June is Rs.50,000.

Solution:

Cash Budget for the period ending 31st August

Particulars	June	July	August
RECEIPTS			
Opening balance	50,000	1,12,000	(94,000)
Collection from debtors	3,72,000	3,00,000	2,82,000
A. Total	**4,22,000**	**4,12,000**	**1,88,000**
PAYMENTS			
Payments to creditors	2,88,000	4,86,000	4,92,000
Wages	22,000	20,000	30,000
B. Total	**3,10,000**	**5,06,000**	**5,22,000**
Closing balance **[A – B]**	1,12,000	(94,000)	(3,34,000)
Overdraft needed	NIL	94,000	3,34,000

Illustration 6:

Prepare a cash budget from January to April.

	Expected Purchases	Expected Sales
Jan	48,000	60,000
Feb	80,000	40,000
Mar	81,000	45,000
April	90,000	40,000

Wages paid is Rs.5,000 per month, cash balance on 1st January is Rs.8,000. Management decides that:

a) In case of deficit up to Rs.10,000, arrangement can be made with the bank.

b) In case of deficit exceeding Rs.10,000 but within Rs.42,000, debentures to be issued.

c) In case of deficit exceeding Rs.42,000, equity shares to be issued.

Solution:

Cash Budget

Particulars	**Jan**	**Feb**	**March**	**April**
RECEIPTS				
Opening balance	8,000	15,000	(30,000)	(71,000)
Cash sales	60,000	40,000	45,000	40,000
Total, say A	68,000	55,000	15,000	(31,000)
PAYMENTS				
Purchases	48,000	80,000	81,000	90,000
Wages	5,000	5,000	5,000	5,000
Total, say B	53,000	85,000	86,000	95,000
Closing balance A – B	15,000	(30,000)	(71,000)	(1,26,000)

The total deficit of Rs.1,26,000 should be raised from the issue of equity shares.

14.10 Flexible Budget

In flexible budget, the data related to costs and expenses may progressively be changed in any month in accordance with the actual output achieved. Costs and estimates are made in advance based on the standards.

A maximum and a minimum level of operation are made. Comparison of budgeted with actual is made. Budgeted activities are taken as the basis.

The principles of flexible budgeting concepts are applied to functional budget and master budgets. Popularly, the flexible budget is adopted for production cost budget. A detailed classification is adopted such as variable, fixed, and semi-variables. By adopting micro-level classifications, it is intended to pin-point the various effects on each class of overheads.

Illustration 7:

Draw a flexible budget for the level of operation at 70%, 80%, and 90%.

Variable overheads at 80% capacity

Indirect labour Rs.12,000

Stores and spares Rs.4,000

Semi-variable overheads at 80% capacity

Power (30% fixed) Rs.20,000

Repair and maintenance at 60% fixed Rs.2,000

Fixed overheads at 80%

Depreciation Rs.11,000

Insurance Rs.3,000

Salaries Rs.10,000

The estimated direct labour hours is 1,24,000

Solution:

Flexible Budget (Overheads)

For the period …………………………

Particulars	**Level of operation**		
	70%	**80%**	**90%**
VARIABLE OVERHEADS			
Indirect labour	10,500	12,000	13,500
Stores and Spares	3,500	4,000	4,500
Total, say A	**14,000**	**16,000**	**18,000**
SEMI VARIABLE OVERHEADS			
Power - 30% Rs.20,000 [fixed]	6,000	6,000	6,000
Power - 70% [variable]	12,250	14,000	15,750
Repairs and Maintenance 60% Rs.2,000 [fixed]	1,200	1,200	1,200
Repairs and Maintenance 40% variable	700	800	900
Total, say B	**20,150**	**22,000**	**23,850**
FIXED OVERHEADS			
Depreciation	11,000	11,000	11,000
Insurance	3,000	3,000	3,000
Salaries	10,000	10,000	10,000
Total, say C	**24,000**	**24,000**	**24,000**
Grand Total A + B + C	**58,150**	**62,000**	**65,850**
Estimated labour hours	1,08,500	1,24,000	1,39,500
Standard overhead rate/hour	0.54	0.50	0.47

Divide the grand total by the estimated labour hours.

14.11 Zero Based Budgeting (ZBB)

Zero based budgeting is "*a method of budgeting where by all activities are revaluated each time a budget is set. Discreet levels of each activity are valued and a combination chosen to match funds available*".

Chartered Institute of Management Accountants (CIMA) London

ZBB is a planning process which requires each manager to justify the entire budget requests in detail from the scratch. It shifts the burden of proof to

each manager to justify why any money should be spent, and also how the job can be done better.

Following are the principles of ZBB.

1. **Goal oriented**
   For all managerial levels, goals are set against which accomplishments would be measured.
2. **Participation**
   Managers at all levels must be involved in the budget process.
3. **Rigor**
   Managers have to not only justify the new proposals and the funds required, but also justify the ongoing activities and the funds required for them.
4. **Evaluation**
   Each programme or activity of each decision unit has to be evaluated.

Steps in ZBB

1. Identifying all activities required to be performed and structuring them as decision packages (programmes).
2. Making a benefits cost analysis (BC analysis) for each decision package.
3. Evaluating each of the decision packages based on a systematic analysis.
4. Ranking the decision packages in order of preference.

Advantages of ZBB

- Avoids waste and complacency.
- Ensures continuous monitoring of the tasks and activities.
- Periodical review of alternative levels of action.
- Budget process is focussed on goal achievement.
- Ensures alignment between budgeting and planning.
- Makes the managers cost conscious and infuses rigor in them.
- Avoids duplication and eliminates redundant activities.
- Ensures most optimum deployment of resources by prioritising activities.
- It discourages reckless usage of resources.
- It encourages participation of managers in the budgeting process.

Activity:
Check any company's budget for the current year and prepare projected budget.

14.12 Limitations of Budgeting

The following are the main limitations of budgeting:

- The success of budgeting depends on the accuracy of the basic estimates or forecasts.
- Budgeting may impose rigidity.
- Budgeting alone is not sufficient as a cost control technique. It needs to be used along with other cost control techniques.
- The installation of budgeting system in an organisation involves considerable outlays.

14.13 Summary

Let us recapitulate the important concepts discussed in this unit:

- Budgetary control is an important tool of cost control.
- Budgets are not actual but estimated statements of cost and revenues.
- Budgets are classified on the basis of functions like sales, production, HR budget, cost budget, etc. Based on time, budgets are classified as operational budgets, short-term budgets, medium-term budgets, and long- term budgets.
- Based on flexibility, budgets are classified as fixed budget and flexible budget.
- Zero Based Budgeting (ZBB) is a modern method of budgeting where each rupee spent has to be fully justified.

14.14 Glossary

Budget: Financial and/or quantitative statement prepared and approved prior to a definite period of time of the policy to be pursued during that period for the purpose of attaining a given objective.

Budgeting: The process of preparing budgets.

Budgetary control: A technique of cost control that involves preparing, implementing, and monitoring of budgets.

14.15 Terminal Questions

1. What are the merits of budgets?
2. Describe the essential features of budgetary control.
3. What are the steps in budgetary control?
4. What are the limitations of budgeting?

14.16 Answers

Self Assessment Questions

1. Estimates
2. Reality and workable preposition
3. Control
4. Planning
5. Safety signal
6. Budgets
7. Management
8. Fixed budget
9. Fixed, flexible, functional
10. Flexible

Terminal Questions

1. Budgetary control aims at the maximisation of profits. Refer to unit 14.5
2. An effective budgeting system should have essential features to get the best results. Refer to unit 14.6
3. The procedure to be followed in the preparation and control of budget may differ from business to business. Refer to unit 14.7
4. The success of budgeting depends on the accuracy of the basic estimates or forecasts. Refer to unit 14.12

14.17 Case Study

Forecast Statement

The profitability statement of Gourmat Co. Ltd. has been summarised as follows:

Particulars	***Rs.***	***Rs.***
Sales		15,00,000
Direct materials	4,50,000	
Direct wages	3,00,000	
Variable overheads	1,20,000	
Fixed overheads	4,40,000	13,10,000
Profit		1,90,000

The budgeted capacity of the company is Rs.20, 00,000 but the key factor is sales demand. In order to utilise the existing capacity, it is proposed that the selling price of the only product manufactured by the company should be reduced by 5%.

You are required to prepare a forecast statement which should show the effect of the proposed reduction in selling price and include any changes in costs expected during the coming year. The following additional information is given:

(i) Sales forecast Rs.19,00,000 (after reduction)
(ii) Direct material prices are expected to increase by 2%.
(iii) Direct wage rate expected to increase by 5% per unit.
(iv) Variable overheads are expected to increase by 5% per unit.
(v) Fixed overheads will increase by Rs.20,000.

Source: Dr. Lal, J., Accounting for Management, HPH

Solution to case study

Forecast Statement of Profit

Particulars	Rs.	Rs.
Sales		19,00,000
Less: Variable costs:		
Direct material	4,50,000	
Add: for increase on account of sales volume	1,50,000	
(1/3 X 4,50,000)		
	6,00,000	
Add: Increase in price (2% of Rs.6,00,000)	12,000	
Materials consumed (1)		6,12,000
Direct wages	3,00,000	
Add: For increase in sales volume	1,00,000	
(1/3 of Rs.3,00,000)		
Add: For increase in wage rates	4,00,000	
(5% of Rs.4,00,000)	20,000	
Total Direct wages (2)		4,20,000
Variable overheads	1,20,000	
Add: For increase in sales volume	40,000	
(1/3 X 1,20,000)		
Add: For increase in rates	1,60,000	
(5% of Rs.1,60,000)	8,000	
Total variable overheads (3)		1,68,000
Total variable costs (TVC) (1+2+3)		12,00,000
Contribution (Sales-TVC)		7,00,000
Less: Fixed overheads	4,40,000	
Add: Expected increase in fixed overheads	20000	460000
Profit		2,40,000

Note:

Sales after price reduction	19,00,000
Sales before price reduction (19,00,000 x 100/95)	20,00,000

Increase in sales volume from present sales without price reduction over existing sales

$$= \frac{5,00,000 \times 100}{15,00,000}$$

= 33.33%

References:

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Unit 15 Standard Costing

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15.1 Introduction

In the previous unit we learnt about a popular technique of cost control i.e., budgetary control. We analysed the objectives, features, steps, advantages, and limitations of budgetary control. Standard costing is another rigorous technique of cost control. It is a very important system of cost control. It is a system which seeks to control the cost of each unit or

batch by determining the cost in advance. It then compares the cost determined with the actual cost. Through planned accounting procedures, the difference between the actual and predetermined costs are analysed and then promptly reported to the managers. Based on this, it is possible to take corrective and preventive action as well as employ the data for planning, coordination, and controlling. In this unit, we shall learn the usage of standard costing as a technique of cost control.

Objectives:

After studying this unit, you should be able to:

- appreciate the need for standard costing as a tool of cost control
- analyse the steps in using the tool of standard costing
- differentiate between the techniques of standard costing and budgetary control
- acquaint with the process of establishment of standards
- compute variances for material and labour cost
- interpret the variances

15.2 Definitions

Standard costing is defined as follows:

"The preparation and the use of standard costs, their comparison with actual costs, and the analysis of variance to their causes and points of incidence."

– Chartered Institute of Management Accountants (CIMA)

"Standard costing may be defined as a technique of cost accounting which compares the standard cost of each product or service with the actual cost to determine the efficiency of the operation so that any remedial action may be taken immediately."

– Brown and Howard.

Standard cost is defined as follows:

"A predetermined cost which is calculated from the managements standards of efficient operation and the relevant necessary expenditure. It may be used as a basis for price fixing and for cost control through variance analysis "

15.3 Steps in Standard Costing

Following are the steps involved in standard costing.

1. Establishment of standards

   It is the first step in the standard costing process. Standards have to be set separately for each item of cost. It needs to be done very meticulously. (Discussed in detail in section 15.5)

2. Comparison of actual costs with the predetermined standards. It is the next step in standard costing. It needs to be ensured that a correct comparison is made. The actual costs must be compared with the standard cost for actual output.

3. Analysing the variances (deviations) of actual costs from the standard costs.

   The difference between the standard cost and the actual cost is called the variance. The variances are to be analysed for each item of cost separately.

4. Reporting

   The variance may be favourable or unfavourable. In either case, it should be reported to the management for taking corrective actions wherever necessary.

15.3.1 The need for standards (advantages)

Standard costing provides many advantages. Hence it has almost become a necessity, especially in manufacturing organisations. The advantages of standard costing are the following:

- **Managerial planning:** A prerequisite for implementing standard costing is a careful estimation about the material consumption rate, prices of inputs, labour requirement, number and skill type, and also overheads. Incidentally, this also helps in management planning with respect to pricing and production policies.
- **Coordination:** The inputs for establishment of standards need to be obtained from all the departments. This compels the executives of different departments to work in close coordination. It also makes them cost conscious.
- **Cost control:** This is the primary objective of standard costing. Standards provide benchmarks against which actual performance is

measured. Standards not only make the employees cost conscious but also serve as incentives to them.

- Economical: In standard costing system, the processes are routine and standardised. Therefore, it serves as a more economical means of costing and record keeping.

15.3.2 Types of standards

- **Ideal (perfect) standards**

These are standards which can be attained in the best and most favourable conditions possible. They do not provide for any excuses like load shedding, machine breakdown time, employee leisure time, etc. Such levels of output/cost can be achieved by skilful and efficient workers. It is very difficult to actually attain these standards. However, such standards are set as they make the employees cost conscious and also motivate them to work more efficiently. Achieving the standards may be linked to performance appraisal.

- **Normal (practical) standards**

These are the average standards. They can be attained under normal working conditions. They are fixed after providing for normal lapses in the working conditions such as unavoidable breakdown time, load shedding, employee leisure time, etc. These are difficult but can be attained. These are next to ideal (perfect) standards.

- **Historical standards**

These are average standards which have been achieved in the past. Historical standards should not be used directly as it may include inefficiencies also. In addition, better and more cost effective methods of production may be available due to technological advancements.

- **Expected standards**

These are standards established for a short period of time and are related to current conditions. They are realistic and attainable. They may be fixed by considering the past data. If reasonable forecasts of future conditions are available, they may be used for fixing the standards.

15.4 Differences between Standard Costing and Budgetary Control

Both standard costing and budgetary control are closely interrelated. They both aim at the improvement of the system of managerial control. They both achieve the same objective of maximum efficiency and cost control by establishing the predetermined standards. They compare actual performance with the predetermined standard. They take necessary steps to improve the situation wherever necessary. Both techniques are forward-looking.

However, the following are some of the differences identified.

1. The scope of budgetary control is wider. It is an integrated plan of action and a coordinated plan with respect to all functions of an enterprise. On the other hand, the scope of standard costing is limited to the operating level.
2. Budgetary control targets are based on past actual data adjusted to future trends. In standard costing, standards are based on technical assessment.
3. Budgeted targets work as the maximum limit of expenses which should not exceed the actual expenditure. Standards are attainable level of performance.
4. Budgetary control emphasises the forecasting aspect of future operations. Standard costing scope and utility is limited to only operating level of the concern.
5. Variance analysis is not compulsory in budgetary control though companies normally do it. Even when it is done, no accounting entry is passed in the books for the variance. But variance analysis is an essential part of standard costing. Variances are analysed and journal entries are passed and posted to the ledger accounts in the costing books.
6. Budgetary control can be operated in parts. That is, as per the needs of the management, only functional budgets may be prepared. A standard costing system cannot be operated in parts. All items of expenditure included in the cost units are to be accounted for.

Self Assessment Questions

1. Standard costing is defined as a technique of cost accounting which compares the _____________ of each product or service with the actual cost.
2. Standard cost focuses on _________.
3. Standard cost and budget control _________.

15.5 Establishment of Standards

Under standard costing system, there is a need to determine the standard costs for each element of cost. The standards are fixed for three main elements of cost namely direct material, direct labour, and overhead.

Standards for each of them should be fixed separately.

Let us understand the three elements in detail.

Direct material

Standard material cost for each item of material should be predetermined. This will require the determination of material quantity standard and material price standard. The standard quantity of each type of materials is determined by the engineering department on the basis of past records, experience, and chemical and engineering tests.

While setting such standards, an allowance should be made for the normal wastage of materials. The standard price for each item of material is established after carefully studying the market conditions and forecasting the trend of prices for a future period. This is done by the cost accountant with the help of purchase officer.

Direct labour

The standard labour time and standard labour rate should be established. Standard time for each grade of labour is fixed by the production engineering department on the basis of time and motion study. In fixing the standard time, due allowance should be made for fatigue, tool setting, instruction receiving, and normal idle time. The standard rates of pay for each category of labour are fixed by the cost accountant with the help of personnel department.

Overheads

These are aggregate of indirect materials, indirect labour, and indirect expenses. Separate standards must be established for variable and fixed overheads. Variable overheads per unit or per hour remain constant at each level of output or sales but total amount of variable overheads tend to vary directly with volume of output or sales.

Therefore, it is sufficient to calculate only a standard variable overhead rate per unit or per hour. This is done by dividing the total variable overheads for the budget period by the budgeted output. With respect to fixed overheads, standards are set for total fixed overheads for the budget period and the budgeted output. The standard fixed overhead rate is computed by dividing the budgeted fixed overheads with budgeted output.

15.6 Cost Variance Analysis

As mentioned earlier, the distinctive feature of standard costing system is variance analysis. By definition, the term “variance” means the variation or deviation of the actual from the standard. In standard costing, it implies the difference between the actual cost and standard cost. Variances indicate the extent to which the standards set have been achieved. If properly recorded and analysed, these variances become very important and serve as a useful tool for managerial control.

Variances by themselves are not the end. They are computed to know the reasons and fix the responsibility for any deviations of actual performances from predetermined targets. Based on this, corrective measures are proposed for adoption in the future. Therefore, variance analysis is the process of analysing variances by sub-dividing the total variance in such a way that the management can assign responsibility for off standard performance. It is hence a very useful means for interpreting operating results and spotting situations calling for correction.

Variances are interpreted as favourable and unfavourable variances. Each variance is interpreted. Interpretation helps in deciding whether a variance is favourable or unfavourable. When the actual cost is less than the standard cost, the difference is termed as “favourable” or “credit” variance. On the other hand, when actual cost exceeds the standard cost, the difference is termed as “unfavourable”, “adverse”, or “debit” variance.

Controllable and uncontrollable variances

The controllable variance can be identified as the primary responsibility of a specified person or a department. If the variance is due to the factors beyond the control of the concerned person or department, it is said to be uncontrollable. No person or department can be held responsible for uncontrollable variances. In reality, revision of standards is required to remove such variances in the future.

Self Assessment Questions

4. Standards are established for _____________, ____________, and _______________.
5. Variation refers to _____________.
6. When the actual cost is less than the standard cost, the difference is termed as ____________ or "credit" variance.
7. Variances are interpreted as __________ and _____________.

15.7 Material Cost Variance

Material cost variance is the difference between the standard cost of materials allowed for the actual output and the actual cost of materials used. It may be expressed as:

Material cost variance = Standard cost – Actual cost

Standard cost = Actual output x Standard rate per unit of output
Actual cost = Actual quantity consumed x Actual price per unit of material

A favourable variance would result if actual cost is less than the standard cost and vice versa. The material cost variance is the sum total of material price variance and material usage variance.

15.8 Material Price Variance

In material price variance, the price paid for materials is different from the predetermined price. It is calculated by multiplying the actual quantity of materials used with the difference between standard and actual prices. The formula is as follows:

Material price variance = (Standard price – Actual price) x Actual quantity used
(MPV = (SP – AP) AQ

A favourable variance would result if the actual price is less than the standard price and vice versa.

15.9 Material Usage Variance

Material usage variance is also known as material quantity variance or efficiency variance. It is that portion of material cost variance which measures the difference in material cost arising from higher or lesser consumption of materials than the standard material consumption for the actual output. It is calculated by multiplying the standard price with the difference between the standard and actual quantitative of materials:

Material usage variance = (Standard quantity – Actual quantity) x Standard price
MUV = (SQ – AQ) SP

A favourable variance would result if the actual quantity is less than the standard quantity and vice versa.

Self Assessment Questions

8. The formula for material cost variance is _______________.
9. The formula for material price variance is ___________.
10. The formula for material usage variance is _______.

Illustration 1: For producing a commodity, the standard quantity of material was fixed as 10 kgs and the standard price was fixed at Rs.2 per kg. The actual quantity consumed was 12 kgs and the actual price was Rs.1.90 per kg. Calculate the material variances.

Solution:

MUV = (SQ – AQ) SP = (10 – 12) 2 = - 4.00 ADV
MPV = (SP – AP) SQ = (2 – 1.90) 12 = 1.20 FAV
MCV = (SQ x SR) – (AQ x AP) = (10 x 2) – (12 x 1.90) = 2.80 ADV
MCV = MPV + MUV

Illustration 2: A factory works on standard costing system. The standard estimates of material for the manufacture of 1000 units of a commodity are 400 kg at Rs.2.50 per kg. When 2000 units of a commodity are manufactured, it is found that 820 kgs of material is consumed at Rs.2.60 per kg. Calculate the material variance.

Solution: First calculate the standard quantity and standard cost.

Standard quantity: For manufacturing 1000 units, the standard estimates = 400 kgs. Therefore, for actual manufactured quantity, the standard is 2000 x 400 / 1000 or 800 kgs.

Standard cost	=	Standard quantity x Standard rate
	=	800 x Rs.25
	=	Rs.2,000
Actual cost	=	820 x Rs. 2.60 or Rs. 2,132
Material cost variance	=	Standard cost – Actual cost or 2000 – 21312
	=	132 ADV
Material price variance	=	(SR – AR) AQ or 2.5-0 – 2.60 x 820
	=	Rs.82 ADV
Material usage variance	=	800 – 820 x 2.50
	=	Rs.50 ADV

15.10 Material Mix Variance

This variance arises only when more than one type of material is used in manufacturing the product and the quantities of materials issued to production are not in proportion of standard mix. It is defined as that portion of the direct materials usage variance which is due to difference between the standard and actual, composition of a mixture. For calculating the mix variance, first calculate the quantities of revised standard mix. This is calculated by dividing the total quantities of actual mix in a standard mix proportion.

Quantities of revised standard mix are referred to as “revised standard quantity”.

Material mix variance = Revised standard quantity for each material – Actual MMV Quantity (for each material) x Standard price

Where **RSQ** = Standard quantity for each material / total of standard quantity of all types of materials x actual mix total

RSQ = Total weight of actual mix / total weight of standard mix (x) standard quantity.

A favourable variance would result if actual quantity is less than the revised standard quantity and vice versa.

Illustration 3: The following extracts are extracted from the books of DR Ltd.

	Standard Mix			**Actual Mix**		
Material	**Qty**	**Rate**	**Total**	**Qty**	**Rate**	**Total**
X	300	5	1500	280	5	1400
Y	200	10	2000	220	10	2200
Total	500			500		

Calculate the material mix variance.

Solution:

Revised standard quantity = Total weight of actual mix / total weight of standard mix x standard quantity

For material X = 500 / 500 x 300 = 300
MMV = For X = (300 – 280) 5 = 100 FAV
For material Y = 500 / 500 x 200 = 200
Y = (200 – 220) 10 = 200 ADV

Total mix variance 100 ADV

15.11 Material Yield Variance

Material <u>yield</u> variance arises only when the rate of output is known. It is that portion of the direct material usage variance which is due to the difference between standard yield specified and actual yield obtained. It measures the

loss or profit due to wastage of materials. This variance is calculated as follows:

MYV = (Standard yield – Actual yield) x standard rate per unit of output or
(Standard loss – Actual loss) x standard rate per unit of output

Where standard rate = standard cost of standard mix / standard output from standard mix standard yield = standard output from standard mix / standard mix total x actual mix total

MYV is an output variance and hence a favourable variance would result if actual yield is more than the standard yield and vice versa.

Self Assessment Questions

11. The formula for material mix variance is __________.
12. The formula for material yield variance is __________.

Illustration 4: The standard mix of product MS is as follows:

Materials	Qty in kg	Price/kg
A	50	5
B	20	4
C	30	10

The standard loss in production is 10% of input. There is no scrap value. Actual production for a month was 7,240 kgs of MS from 80 mixes. Actual purchases and consumption of materials are:

Materials	Qty in kg	Price/kg
A	4160	5.50
B	1680	3.75
C	2560	9.50

Solution:

Statement showing standard input requirements of 80 mixes of product MS.

Material		Standard			Actual	
	SQ	SR	SC	AQ	AR	AC
A	4,000	5	20,000	4,160	5.50	22,800
B	1,600	4	6,400	1,680	3.75	6,300
C	2,400	10	24,000	2,560	9.50	24,320
Total	**8,000**		**50,400**	**8,400**		**53,500**
Less std. loss	800					
Final output	**7,200**		**50,400**			

SC per kg of finished product = 50,400 / 7200 kg = Rs.7 per kg
Cost variance = SC - AC or 7 x 7240 -53500 or Rs.2, 820 ADV
Price variance = (SR – AR) x A Q
A = Rs.2,080 ADV
B = Rs.420 FAV
C = Rs.1,280 FAV
Mix variance = (RSQ – AQ) SR
A = [(8400 x 50 /100)-4160] Rs. 5 = 200 FAV
B = [8400 x 20 / 100 -1680]x Rs. 4 Nil
C = [8400 x 30 / 100 -2560]x Rs. 10 = 400 ADV
Total: 200 ADV
Yield variance = (SY – AY) SR per kg
Standard yield = 8400 kg x 9 / 10 or 7560 kg

15.12 Direct Labour Variance

The same principles apply to the calculation of direct labour variances as for the direct material variances. Standards are established for the rate of pay to be paid for the production of particular products and labour time taken for their production. The standard time taken is expressed in standard hours or minutes and becomes the measure of output. By comparing the standard hours allowed and the actual time taken, labour efficiency can be assessed. In practice, standard times are established by work, time, and method study techniques.

Direct labour variance

Direct labour variance is the difference between actual labour cost and the standard labour cost of production achieved. It is calculated as follows:

Total labour cost = Hours worked x Rate per hour

Labour cost variance = Standard cost – Actual cost

Shorten = SC – AC or (Standard labour hours x standard rate per hour) – (Actual labour hours x Actual rate per hour)

Illustration 5: The management of DR Ltd. decides that it takes 6 standard hours to make one Denim jacket and the standard rate paid to labour is Rs.8 per hour. The actual production is 900 units and this took 5,100 hours at a rate of Rs.8.30 per hour. Calculate the direct labour total variance.

Solution: Calculate the standard labour hour for 900 jackets.

For one jacket production, the standard hour is 6.

Therefore, for producing 900 units, the standard hour is 900 x 6/1

= 5,400 hours.

DLV = (5,400 x 8) – (5,100 x 8.30) = Rs. 870 favourable.

A favourable variance would result when the actual cost is less than the standard cost and vice versa. Labour cost variance is the sum total of labour rate variance, labour efficiency variance, rate variance, idle time, and labour calendar variance.

15.13 Labour Efficiency Variance

Labour efficiency variance is that portion of labour cost variance, which is due to the difference between the standard labs or hours specified for the activity i.e., output achieved and the actual labour hours worked. It is calculated by multiplying standard rate of wages with the difference between standard hours and actual hours worked.

LEV = (Standard hours – actual hours worked) x standard rate

In short, LEV = (SH – AH) x SR

A favourable variance would result when actual hours worked are less than standard hours and vice versa.

Illustration 6: From the data above, calculate the labour efficiency variance.

Solution: (5400 standard hours – 5100 actual hours) x Rs.8 standard rate
Rs. 2,400 FAV

15.14 Labour Rate Variance

Labour rate variance is that portion of labour cost variance which is due to the difference between the standard rate specified and the actual rate paid. It is calculated by multiplying the actual hours paid with the difference between standard rate specified and actual rate paid.

Labour rate variance = (Standard rate – Actual rate) x actual hours paid.

In short, LRV = (SR – AR) AH

Self Assessment Questions

13. The formula for direct labour variance is ___________.
14. The formula for labour efficiency variance is _________________.
15. The formula for labour rate variance is __________.

Illustration 7: Citing DR example, calculate the direct labour rate variance.

Solution:

(Rs.8 – 8.30) x 5,100 hours or Rs.1,530 ADV

Labour idle time variance

This variance is that portion of labour cost variance which is due to abnormal idle time of workers. This variance is calculated to separately show the effect of abnormal causes affecting production such as failure of power supplies, machine breakdown, waiting for materials, waiting for instructions, strike, and lock-outs. It is calculated as follows:

Labour idle time variance = Idle hours x standard hourly rate

This variance is always an adverse one.

Illustration 8: To manufacture a product, 200 employees are engaged at a rate of 50 paise per hour. A five day week of 40 hours is worked and the standard performance is set at 250 units per hour. During the first week in January, six employees were paid at 45 paise an hour and four at 56 paise an hour. The remaining employees were paid at standard rates. The factory stopped production for one hour due to power failure. Calculate variances.

Solution:

Efficiency variance = (Std hours – actual hours worked) x std rate
(8000 – 7800) 0.50 or Rs.100 FAV
Rate variance = (SR – AR) AH

	(0.50 – 190 employees x 40 hours	= Nil
	(0.50 – 0.40) x 6 x 40	12.00 FAV
	(0.50 –.56) 4 x 40	9.60 ADV
	Total	2.40 FAV

Idle time variance = Idle hours x std rate per hour
200 hrs and 0.50 or Rs.100 ADV
Labour cost variance = LEV +_ LRV + Idle time variance
100 FAV + 2.40 FAV + 100 ADV = Rs. 2.40

15.15 Labour Mix Variance

This variance arises only when different types of workers (women and men workers, trained, semi-trained, and untrained workers) are employed in manufacturing. If the actual working force of different grades of workers is not in the predetermined ratio, then the mix variance will occur. The variance shows the management how much of the labour cost variance is due to the changes in the composition of labour force. It is calculated as follows:

LMV = (Revised standard hours – actual hours worked) x standard hourly rate

In short, LMV = (RSLH – ALH) x SR

Where revised standard hour = total time of actual worker / total time of standard workers x standard labour rate.

Illustration 9: The labour budget for a week is as follows:
40 skilled men at Rs.1.50 per hour for 80 hours
80 unskilled men at Re.1 per hour for 80 hours
Actual labour force was used are given below:
60 skilled men at Rs.1.50 per hour for 80 hours
60 unskilled men at Re.1 per hour for 80 hours

Calculate labour mix variance.

Solution:

Revised standard labour hours = total time of actual workers / total time of standard workers x standard labour hours
Skilled worker = 80 / 80 x 80 = 80 hours
Unskilled = 80 / 80 x 80 = 80 hours
LMV = Skilled = (3,200 – 4,800) 1.50 = Rs. 2,400 ADV
Unskilled = (6,400 – 4,800) Re.1 = Rs.1, 600 FAV
Total labour mix variance Rs. 800 ADV.

15.16 Labour Yield Variance

This is due to the difference in the standard output specified and the actual output obtained. The formula is as follows:

LYV = (Actual output – Standard output) x Standard cost per unit

Illustration 10: Calculate the following:
(a) Labour rate variance
(b) Labour efficiency variance
(c) Labour cost variance

Standard: Labour rate 0.24 paise per hour. Labour hours 3 per unit.

Actual: Units produced 250. Labour rate 0.25 paise per hour. Hours worked 800.

Solution:

LRV : (SR – AR) AH or Rs.8 ADV
LEV = (SH – AH) SR or Rs.12 ADV
LCV = (SLC – ALC) or (SH x SR) – (AH x AR) = Rs.20 ADV

Activity 1:
List out the possible causes of material and labour cost variances in a manufacturing concern.

Solution to Activity 1

Causes of material cost variances	Causes of labour cost variances
• Faulty design of products • Faulty machines or processes • Unexpected rise in prices of materials • Wastages, breakages, improper storing of materials • Substandard materials • Purchase of materials from wrong sources/suppliers (i.e., suppliers charging higher prices) • Increase in taxes, duties etc. • Insufficient and ineffective control system and pilferage	• Faulty selection of people • Improper allocation of tasks • Poor coordination • Unmotivated, inexperienced, and under-skilled employees • Changes in government regulations like minimum wage rates, working conditions, etc. • Changes in labour rate • Idle time like machine breakdown, power failure, strikes, lockouts, employee sickness, vacation, etc. • Insufficient training of employees • Poor working conditions like inadequate or excessive heating, lighting, ventilation, etc

Self Assessment Questions

16. Material usage variance is an uncontrollable variance. (True/False)
17. Idle time variance is always unfavourable. (True/False)

18. Labour mix variance is also called gang composition variance. (True/False)
19. If actual out put is more than the standard output, then the yield variance is unfavourable. (True/False)
20. The input is 200 kg. If the normal loss is 5%, the standard yield is 195 kg. (True/False)
21. Labour time variance is also called labour efficiency variance. (True/False)

15.17 Summary

Let us recapitulate the important concepts discussed in this unit:

- Standard costing is a system of cost accounting which is designed to show in detail how much each product should cost to produce and sell when a business is operating at a stated level of efficiency and for a given volume of output.
- It involves setting predetermined standards for costs of materials, labour, and overheads, comparing actual costs with the standards and analysing and accounting for the variances if any.
- The standards are fixed for three main elements of cost namely direct material, direct labour, and overhead.
- "Variance" is the difference between the actual cost and standard cost.

15.18 Glossary

Analysis of variance**:** The process of analysing the difference between the actual cost and the standard cost and the reasons for the difference.

Labour cost variances**: Difference between the actual labour cost and the standard labour cost.**

Material cost variances: Difference between the actual material cost and the standard material cost.

Standard cost: A predetermined cost.

15.19 Terminal Questions

1. How is standard costing related to budgetary control?
2. How do you fix standard for direct material, direct labour, and direct overheads?
3. Write short note on:
   a) Material price variance
   b) Material mix variance
   c) Material yield variance
4. Briefly describe labour mix variance and yield variance.
5. Compute price, usage, cost, and mix variance.

Material		Standard			Actual	
	Quantity	Price	Total	Qty	Price	Total
A	6	1.50	9	5	2.40	12
B	2	3.5	7	1	6	6

6. Data given below pertains to DR Ltd. Compute labour cost variances.

	DEPARTMENT	
	A	B
Actual gross wages	2,000	1,800
Standard hours produced	8,000	6,000
Standard rate per hour	0.30	0.35
Actual hours worked	8,000	5,800
Calculate labour variances		

15.20 Answers

Self Assessment Questions

1. Standard cost
2. Financial control
3. Closely interrelated
4. Direct martial, direct labour, overheads
5. Deviation
6. Favourable
7. Favourable and adverse

8. SC – AC
9. (SP – AP) x AQ
10. SQ – AQ x SP
11. RSQ – AQ x SP
12. SY – AY x SR
13. SC-AC
14. SH – AH x SR
15. SR - AR x AH
16. False
17. True
18. True
19. False
20. False
21. True

Terminal Questions

1. Refer to unit 15.4 for differences between standard budget and budgetary control
2. Establishment of standards is the first step in the standard costing process. Refer to unit 15.5
3. Refer to unit 15.8, 15.10, and15.11
4. Refer to unit 15.15 and15.16
5. Price variance = (SR – AR) AQ for A = Rs. 4.50 ADV
   For B = Rs.2.50 ADV total Rs.7 ADV
   Usage variance: (SQ – AQ) SP for A = 1.50 FAV
   For B = 3.50 FAV Total Rs. 5 FAV
   Cost Variance = MUV + MPV = 5 – 7 or 2 ADV
   Mix variance = (RSQ – AQ) SP where RSQ = A 6 /8 x 6 or 4.5 kgs
   B 6/8 x 2 or 1.5 kgs
   For A (4.5 – 5) x 1.5 or 0.75 ADV
   For B (1.5 – 1) x 3.5 or 1.75 FAV Therefore total 1 FAV

6. Standard labour cost; Dept A 8000 x 0.30 = 2,400
   B 6,000 x 0.35 = 2,100
   Actual rate A 2000. / 8000 = 0..25
   B 1800 / 5800 or 900 /29 paise
   LRV = (SR – AR) AH Dept A = (0.30 – 0.25) 8000 = 400 FAV
   B = (.35 – 900 /25) x 5800 = 230 ADV
   LEV = (SH – AH) SR for A = (8000 – 8000) x 0.30 Nil
   B = (6000 – 5800)0.35 70 ADV
   LCV : (SLC – ALC For A (2400 – 2000) 400 FAV
   B (2100 – 1800) 300 ADV

15.21 Case Study

Variance Analysis

The Amindon Company Ltd. produces a product with the following standard cost per unit:

Material	2 kgs at Rs.5	Rs.10
Labour	5 hours at Rs.2	10

Actual data for the year was as follows:

1. Purchases 1, 00,000 kgs of material at Rs.4.90 per kg
2. Labour was obtained at a price of Rs.3.10 per hour
3. Production completed - 37,500 units
4. Labour-hours - 1, 90,000
5. Material used - 90,000 kgs

Inventories data:

Opening: 1,000 units, 50% complete as to material, labour, and overhead.
Closing: 4,000 units, 75% complete as to material, labour, and overhead.

Required

1. Calculate material price variance at the point of purchase and issue.
2. Calculate labour variances.
3. Comment on the variances.

Source: Khan and Jain, *Management Accounting 4/e*, TMH

Solution to case study

1. (a) Material purchase price variance: (SR – AR) x AQ purchased = (Rs.5 – Rs.4.90) x 1,00,000 kgs = Rs.10,000 (Favourable)

   (b). Material price variance (at the time of issue): (SR – AR) x AQ used = (Rs.5 – Rs.4.90) x 90,000 kgs = Rs.9,000 (Favourable)

2. **Labour variance:**

   Labour cost variance = (Standard labour cost of 40,000 units* - Actual labour cost) = [Rs.4, 00,000 – 5, 89,000] = Rs.1, 89,000 (adverse)

   Units produced during the year:

	Units
Production completed	37,500
Plus closing inventory (4,000 x 0.75)	3,000
Less opening (1,000 x 0.50)	500
	40,000

(a) Labour rate variance: (SR- AR) x AH = (Rs.2 – Rs.3.10) x 1,90,000 = Rs.2,09,000 (adverse)

(b) Labour efficiency variance: (SH – AH) x SR = [2,00,000 hours or (40,000 x 5) – 1,90,000 hours] x Rs 2
= Rs.20,000 (favourable)

Comment:

- Material price variance is favourable. It implies that materials have been purchased at lower prices than the standard price.
- The labour rate variance is adverse. It implies that labour has been paid at a higher rate than the standard rate.
- Labour efficiency variance is favourable. It implies that labour has consumed lesser time than the standard time for completing the job.

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