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Series Editor
DEBASHIS CHATTERJEE

ACCOUNTING SIMPLIFIED

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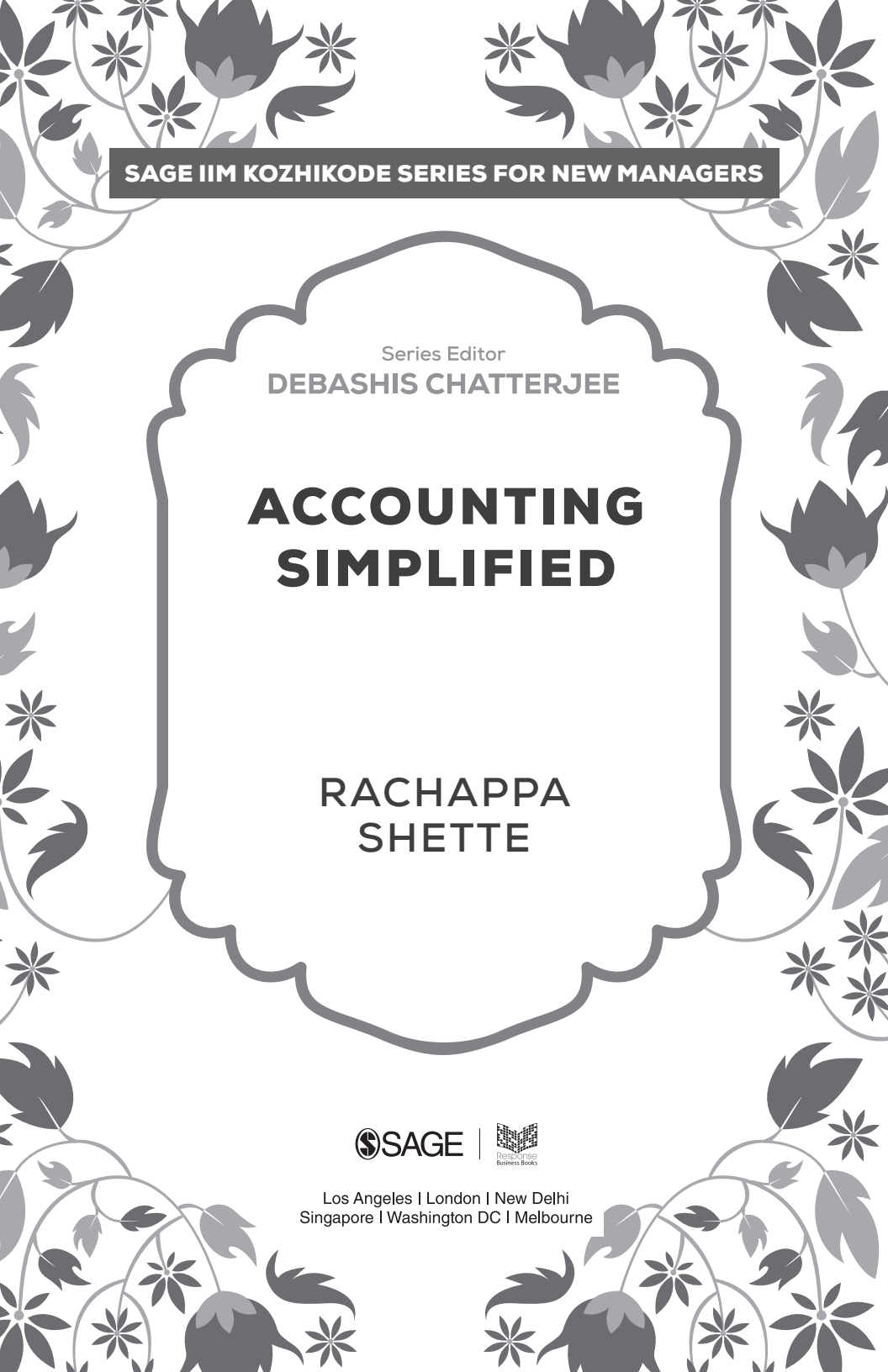
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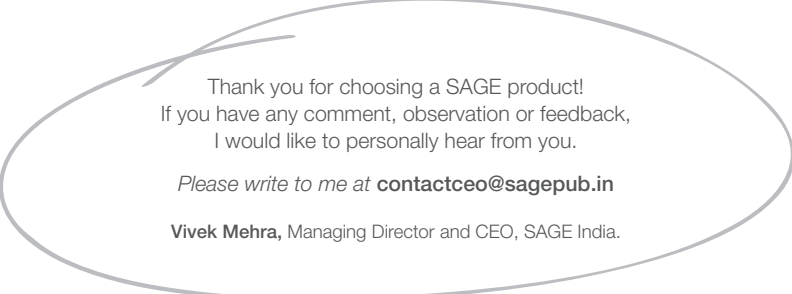
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SERIES NOTE

The SAGE IIM Kozhikode Series for New Managers has key business and practical insights for management graduates and first-time managers alike. Penned by the distinguished faculty of the premier management institute IIM Kozhikode, the books in this series are succinct, illustrative and are replete with real-life examples. These books will endow new managers with business expertise and empower them as they navigate a volatile and highly competitive corporate world.





NOTE BY SERIES EDITOR

Dear Reader,

SAGE IIM Kozhikode Series for New Managers presents *Accounting Simplified* from the esteemed faculty member of the Indian Institute of Management Kozhikode (IIMK), Dr Rachappa Shette. The book is a manager's approach to accounting and finance for effective corporate decisions.

An accountant's approach to accounting generally consists of difficult language and financial jargons. To understand profit and loss statements, costing, balance sheet, income and cash flow statements for a fresh graduate or a rookie manager from a non-financial background can be a bottleneck, leading to total disinterest in the area or dependency on finance managers or erroneous decision-making. The author in the book has overcome this predicament successfully. In simple language, the book showcases aggregated financial statements of major listed companies in India and provides insights from its analysis for better managerial decision-making. Chapters 1–5 of this book deal with helping the managers in understanding and analysing balance sheets, statement of profit and loss, and cash flow statements.

Chapters 6–7 of this book deal with enhancing the competitive advantage through cost management for improving the top and bottom lines of business organizations. This section helps the young managers in understanding break-even point, relation between cost, volume and profit, and measuring costs as well as performance evaluation of products and strategic business units, segments, customers, etc. The accounting concepts are described with the help of corporate as well as



personal finance examples to make them easy and simple to digest.

Accounting Simplified and the other books in the SAGE IIM Kozhikode Series for New Managers aim to bridge the gap between the demands of the corporate world and quality management education. As a new manager and professional, you will be ready to face the corporate world with greater clarity and confidence after reading the books in this series.

Debashis Chatterjee

Director

IIM Kozhikode





PREFACE

I have been teaching financial statements to business executives from accounting and non-accounting backgrounds for last 15 years. In my current organization, as well as in previous organizations, I have had training executives not only from operations, production, human resources, research and development but also from accounting, finance and forensic accounting. The structure of this book is based on my experience of training such business executives, and their positive feedback is the motivation for writing the book. I classify the business executives whom I taught or trained into three categories as per their perception of accounting. The person who is reading this book would fall into one of these categories.

First, the executives with strong technical knowledge in their domain and ignorant of accounting. These business executives have degrees such as BTech from IITs and NITs, FRM, MBBS and BA in history and geography and are working in different companies. I found that it was easy to teach accounting to these executives. During tea breaks, when I tell them that it is easy to teach anything to such bright participants, they compliment me by saying that my unique way of teaching makes accounting simple to understand.

Second, the executives with sound knowledge of their field and ignorant of accounting-based financial statements. By integrating the executives' day-to-day business activities with accounting, I make them understand not only accounting-based financial statements but also how to use accounting-based information for better managerial decision-making related to sales, production, operations, purchases, etc. At the end of the session, when I tell them that their



strong business knowledge helped me in having an interesting interaction in the accounting session, they compliment me by saying that my emphasis on integrating different functions of management with accounting for better business decision-making made the session thought-provoking.

Finally, business executives with sound knowledge of accounting and little knowledge of other functions of an organization. Such participants are qualified chartered accountants, cost and management accountants, certified financial analysts and masters of accounting and economics from reputed colleges in India. I like interacting with such groups and emphasizing how accounting information can be made simple for their colleagues from non-accounting areas and how it can be presented in user-friendly formats. This was well received by accounting executives.

I always enjoy easy as well as complex questions from the participants in my interactive accounting sessions. I address most of the questions comfortably except one question. When a participant asks me which book I would suggest for additional learning of accounting in a simple and easy way, I have no answer. There are many great books in India. However, most of the accounting books require long time to learn accounting and need some basic knowledge of accounting to enhance learning from the book. Ten years ago, I felt that there should be an accounting book written in plain language without using accounting jargons from non-accounting managers' perspective. A few publishing houses approached me for authoring an accounting book, and I declined such requests. However, when Professor Debashis Chatterjee offered me to write an accounting book for business executives as a part of the SAGE IIM Kozhikode Series for New Managers, I accepted it happily.

After spending about nine months in thinking about the uniqueness of this book, on the basis of the comments



received from the executive participants in training sessions, I felt that this book should focus on simplifying accounting for non-accounting managers to improve their organizations' performance and financial health. Later, I spent about one year, along with performing my other academic activities, to complete this book. It would have taken even more time if there were no stringent lockdown due to COVID-19.

I hope you will find accounting simple while reading this book and will find it useful in your business organization. It is advisable to read the book in the given order of chapters to make it easier.





ACKNOWLEDGEMENTS

First and foremost, my sincere thanks to Professor Debashis Chatterjee, Director of IIMK, for his suggestion of authoring this book and continuously following up on the progress with enthusiasm and patience. I am grateful to IIMK for its rich resources and great natural ambience.

I am deeply indebted to all my teachers throughout my education. I wish to thank my first accounting lecturer, Shri Chitla Narayan Reddy, and economics lecturer, Shri G. Narsimlu, for giving me strong foundation in accounting and economics. I am indebted to my teacher and mentor Professor K. V. Achalapathi, who has been an inspiration in teaching and research.

I am grateful to Professors Sudershan Kuntluru, Amit Srivastava, Sunder Ram Korivi, M. Venkateshwarlu, Subrato Chatterjee and C. D. Sreedharan for their valuable inputs and suggestions. I wish to thank Professors Deepak Dhayanithy and Deepa Sethi for their support and motivation while preparing the manuscript of this book.

I am deeply thankful to Namarita Kathait and Manisha Mathews from SAGE for their help in preparing the manuscript of the book.

I wish to thank my parents who provided me with a splendid education. Finally, and most importantly, thanks a lot to my life partner, Jyoti, and children, Vedant and Vaidehi, for providing me short and re-energizing breaks when I needed them while developing this manuscript.



* 1 *

BALANCE SHEETS CAN BE INTERESTING AND REVEALING

Generating (financing) the funds, investing the funds and running the operations are three major economic activities in any organization. A company's activities such as generating funds from issue of shares from public, borrowing from public by issue of bonds and borrowing from financial institutions are the examples of financing activities. A company's activities relating to investment in land, building, plant, equipment, furniture, computer, patents and inventory are the examples of investing activities. The operating activities of a company include designing, purchases, production, sales, marketing, administration, distribution, etc.

A balance sheet, statement of profit and loss, and cash flow statement are the primary corporate financial statements of listed companies in India and other countries. The financial statements of a company provide a summary of its three primary activities. The balance sheet is the summary of financing and investing activities. Hence, it is also known as sources of funds and application of funds. The sources of funds represent the financing activities, and application of funds represents investing activities of companies. The statement of profit and loss is the summary of all operating activities of companies. The third and final statement, that is, cash flow statement,



captures all cash inflows and outflows related to financing, investing and operating activities over a period. Cash inflows include receipts from clients, sale of investments, borrowings, etc., and cash outflows include payments related to salaries, purchase of material, purchase of plant, repayment of borrowings, etc. A summary of all cash inflows and cash outflows of an organization in a particular period is in the form of a cash flow statement.

Such balance sheets, statements of profit and loss, and cash flow statements play an important role in understanding financial health and financial performance of the company. A detailed examination of such statements also enables in understanding the drivers of financial performance in the past and drivers of performance in the future. Therefore, financial statements are frequently used by existing and potential investors, bankers, lenders, suppliers, customers, managers, board of directors, equity analysts, credit analysts and other stakeholders of the company in decision-making. Investors' investment decision, lenders' or bankers' lending decision, suppliers' credit sales policy, customers' long-term association with the company, review of the performance of the chief executive officer and other senior managers by the board of directors, equity analysis by equity analysts and evaluation of creditworthiness by credit analysts heavily and frequently depend on such financial statements.

First, let us understand what a balance sheet is and how to diagnose the financial health of a company using it. A balance sheet is a statement showing various sources of funds and application of these funds on a particular day. In accounting language, sources of funds are known as liabilities and equity. Liabilities are the financial obligations owed by a company to others, for example, borrowings from a bank, credit purchases



from suppliers and retirement benefit promises to employees by a company. The funds which belong to owners who are also known as investors or shareholders or stockholders are called equity. The equity is in the form of capital contributed by owners and profits retained within the company. Thus, liabilities and equity are the two sources of funds in any organization.

The second part of a balance sheet is application of funds. The funds generated from banks or owners are applied in creating assets of the company. The funds can be used for acquiring plant, property, equipment, patents, inventory, etc. These all are the examples of applications of funds of a company. These applications of funds in multiple avenues are called assets in accounting language.

Thus, a balance sheet captures two primary activities of any company: financing activity and investing activity. The financing activities result in liabilities and equity, and investing activities create different assets in the balance sheet. The total of assets is always equal to the total of liabilities and equity in a balance sheet.

A balance sheet is an important source of information of any company to understand critical aspects such as major assets and major liabilities of the company. It also helps in understanding certain important aspects such as value of the company as per the balance sheet and short- and long-term financial abilities of the company to honour liabilities of the company.



Table 1.1: Bharat Electronics: Balance Sheet as on 31 March 2018
(₹ in Lakh)

Particulars	Note No.	As on 31 March 2018	As on 31 March 2017
Assets			
1. Current Assets			
a. Inventories	11	458,772	485,576
b. Financial assets			
i. Trade receivables	7	570,458	435,488
ii. Cash and cash equivalents	13	73,822	268,596
iii. Bank balance (other than above)	14	48	110,422
iv. Loans	8	2,724	4,328
v. Other financial assets	9	139,986	26,993
c. Current tax assets (net)	15	24,994	9,991
d. Other current assets	12	153,066	60,766
		1,423,870	1,402,160
2. Non-current Assets			
a. Property, plant and equipment	1	160,441	125,476
b. Capital work in progress	2	39,545	36,389
c. Investment property	3	11	12
d. Other intangible assets	4	257	43
e. Intangible assets under development	5	43,735	29,242



Particulars	Note No.	As on 31 March 2018	As on 31 March 2017
f. Financial assets			
i. Investments	6	90,315	45,970
ii. Trade receivables	7	0	0
iii. Loans	8	4,577	3,718
iv. Other financial assets	9	2,855	3,151
g. Deferred tax assets (net)	10	43,117	53,228
h. Inventories	11	18,780	4,925
i. Other non-current assets	12	21,587	11,299
		425,220	313,453
Total Assets (1 + 2)		1,849,090	1,715,613
Equity and Liabilities			
3. Equity			
a. Equity share capital	16	24,366	22,336
b. Other equity		751,735	728,518
		776,101	750,854
Liabilities			
4. Non-current Liabilities			
a. Deferred income	17	3,298	827
b. Financial liabilities			
i. Borrowings	18	3,333	1,667
ii. Trade payables	19	5	0
iii. Other financial liabilities	20	123	72
c. Provisions	21	82,249	89,019

(continued)



(continued)

Particulars	Note No.	As on 31 March 2018	As on 31 March 2017
d. Other non-current liabilities	22	1,035	1,469
		90,043	93,054
5. Current Liabilities			
a. Deferred income	17	86	20
b. Financial liabilities			
i. Trade payables	19	140,015	133,061
ii. Other financial liabilities	20	84,671	61,055
c. Other current liabilities	22	714,379	636,558
d. Provisions	21	43,795	41,011
e. Current tax liability (net)	15	0	0
		982,946	871,705
Total Equity and Liabilities (3 + 4 + 5)		1,849,090	1,715,613

Source: Bharat Electronics Limited. 2018. *Annual Report, 2017–2018*. Bengaluru: Bharat Electronics Limited.

BALANCE SHEET AND ITS CONTENTS

ASSETS

The economic resources owned by a company are known as assets. Such assets presented in the balance sheet are classified as current assets and non-current assets on the basis of useful period of the assets. The assets which are going to be used in one-year period from the date of balance sheet are called current assets. The assets which are going to be used for more than one year from the date of balance sheet are classified as non-current assets. Inventory and short-term investments are



examples of current assets and machine, whereas land and building are examples of non-current assets. In some balance sheets, current and non-current assets are sub-classified as financial and non-financial assets. Financial assets are those assets whose value in the hand of the company depends on a contract or bond. Investment in bank deposits is an example of financial asset, and land and building is an example of non-financial asset.

Current Assets

Current assets are also referred to as short-term assets. The assets which can be liquidated or converted into cash in next one-year period are called current assets. The four most frequent items of current assets in any balance sheet are inventory, financial assets (cash and bank balance, accounts receivables, etc.), deferred tax assets and other current assets. Table 1.1 presents the balance sheet of Bharat Electronics Limited (BEL) to understand current assets of a corporate entity. These current assets are described briefly as follows.

In the case of BEL's balance sheet (Table 1.1), the inventory as an asset is ₹458,772 lakh, constituting 25 per cent of total assets. Now, let us understand what inventory is in BEL or any other company. The inventory is an important current asset in the case of manufacturing company like BEL and retail companies. It consists of raw material, work-in-progress goods or semi-finished goods and finished goods. All these three items of inventory are held for consumption in operations and production or held for sale. The inventory is an important asset in the retail industry and manufacturing industries. It may be the biggest asset in the case of companies trading gems and jewellery. At the same time, the inventory may be insignificant or even nil in the case of information technology companies and banking companies.



The assets whose value is derived from the contracts or agreements between the company and outsiders are called financial assets. Cash and bank balance, accounts receivables, investments in other entities, and loans and advances given to others are some of the most frequent financial current assets. These assets are described briefly as follows.

1. Cash and bank balance: The cash and bank balance in the balance sheet of BEL is ₹73,882 lakh, constituting 4 per cent of its total assets. This cash and bank balance includes sum of the cash held by the company in different units of the company and balance held in multiple bank savings and bank current accounts. Cash and bank balance is the most liquid asset. It is needless to mention that cash and bank balance is held for meeting day-to-day payment obligations and is an essential current asset of any company. As banking companies deal with cash and bank balance in every transaction, this asset is in large amount in the case of banking companies as compared to manufacturing companies

2. Accounts receivables: The accounts receivables of BEL from its customers/clients are ₹570,458 lakh. This is about 31 per cent of total assets of BEL. This is one of the largest assets of BEL. The accounts receivables are the amount owed by customers and clients to the company as a result of credit sale of goods and services. Accounts receivables are also referred to as trade receivables and debtors. The credit sales made by BEL to their customers such as the Indian Army and the Indian Air Force and yet to be collected on the date of balance sheet is the example of accounts receivables of BEL. For example, credit services provided by software companies to their banking client are accounts receivable (trade receivables or debtors) in the balance sheet of software company. The amount of accounts receivable of a company depends on the credit sales policy of the company.



3. Investments: Short-term investments in equity, preference shares, bonds/debentures, short-term time deposits, short-term investments in mutual funds, etc., are the examples of investments made for less than one-year period. There are no short-term or current investments made by BEL as on 31 March 2018.

4. Loans and advances: As per the balance sheet of BEL, the loans given by this company are ₹2,855 lakh. It is one of the smallest assets of the company as it is just 0.15 per cent of the total assets. These are the short-term loans and advances given by a company to its employees, subsidiaries, joint ventures, associates, vendors, etc.

5. Other current assets: The other current assets of BEL amount to ₹153,066 lakh, amounting to 8 per cent of the total assets. Other current assets include certain small miscellaneous short-term assets such as prepaid expenses such as prepaid insurance premium, prepaid salaries and other prepaid expenses; advance taxes paid; and deposits with authorities for utilities such as water and electricity. Any current asset which is not shown as a separate line item in the balance sheet is included in other current assets.

Thus, current assets are short-term assets in nature which are going to be consumed or liquidated into cash within one-year period from the date of balance sheet. Companies hold current assets to help and fund the day-to-day operations of the company. In the case of BEL, the sum of current assets is ₹1,423,870 lakh. These current assets are a significant portion of total assets of BEL as they amount to 77 per cent of total assets of the company as on 31 March 2018.

Non-current Assets

The assets that would be used for more than one year are known as non-current assets. The non-current assets are also



known as long-term assets. Examples of this category of assets include machines, equipment, tools, building, land, patent, trademarks, etc. These assets are used for more than one year either for one or multiple activities related to production, operation, sales, distribution, etc. The airline and hotel industries generally have large amount of non-current assets as the airline industry has flight equipment and hotel industry has property as major assets.

Non-current assets are further classified as tangible and intangible non-current assets. The visible non-current assets are called tangible non-current assets. Machine, building, land, etc., are the examples of tangible non-current assets. The invisible non-current assets are called intangible assets. Intellectual property rights, patents, trademarks and goodwill are the common items of intangible assets. The frequent non-current assets in the balance sheet include plant, property and equipment (PPE); capital work in progress; intangible assets and intangible assets work in progress. Table 1.1 presents non-current assets of BEL.

1. Plant, Property and Equipment (PPE): PPE of BEL is ₹160,441 lakh, that is, 8.68 per cent of total assets. These are tangible long-term assets of the company, which include land, building, machines, furniture, tools, etc.

2. Capital work in progress: In the case of BEL, capital work in progress is ₹39,545 lakh with 2.14 per cent of the total assets. The capital work in progress in the balance sheet includes all long-term assets which are under construction or installation or development, for example, buildings under construction and machines in the process of installation.

3. Intangible assets: BEL's intangible assets and intangible assets under development are ₹257 lakh and ₹43,735 lakh,



respectively. The intangible assets of this company are less than 0.01 per cent, and intangible assets under development are about 2.37 per cent of the total assets. These are invisible assets owned by this company. These assets include patents, trademarks, copyrights, goodwill, etc. These assets are higher in the case of technology and pharma companies. Some companies show intangible assets under development as a separate asset item. Intangible assets under development are intangible assets in progress, for example, R&D projects at an advance stage.

4. Investments: The investments of BEL are ₹90,315 lakh, that is, 4.88 per cent of the total assets. These investments are also referred to as financial assets. These assets include long-term investments made by the company in subsidiary companies, joint ventures, partnership companies and any other company; loans given to other companies, vendors, customers and employees; investments in the bonds issued by the Reserve Bank of India, fixed deposits, etc.

5. Deferred tax asset: Deferred tax asset is of ₹43,117 lakh, that is, 2.33 per cent of the total assets. This asset is the result of overpayment or advance payment of taxes for a long period in the future. If such overpayment of taxes is for a short period, it appears as deferred tax asset in current assets category.

6. Other non-current assets: The other non-current assets of BEL are ₹21,587 lakh with 1.17 per cent of the total assets. Any other asset which is not shown as a separate line item in the above list is part of this asset. Insurance premium or building rent paid in advance for a long term, inventory held for more than one year, deposits with statutory/government authorities, etc., are generally part of other non-current assets.



UNDERSTANDING EQUITY AND LIABILITIES

Equity and liabilities are also referred to as sources of funds to the company. The funds that are owed to the owners of the company and the non-owners (such as bankers, vendors, customers, employees and government) by the company are known as equity and liabilities of the company, respectively. The equity and liabilities of BEL are presented in Table 1.1.

EQUITY IN DETAIL

The equity of BEL is ₹776,101 lakh which is 41.97 per cent of total sources of funds (liabilities plus equity) or total assets. This percentage implies that equity is the major source of funds in BEL. Now let us understand what equity is. It is the financial obligation of a company to its owners. As the owners of a company hold a share of capital, they are called shareholders of the company. A part of the share of the capital is also known as stock; thus, owners or shareholders of the company are also called stockholders. Thus, the owners of the company are called equity shareholders or stockholders. Hence, the claims of the shareholders or stockholders or owners of the company are called equity or equity shareholders' funds. These shareholders' funds or equity owed to owners by the company consist of two items, that is, equity capital and other equity.

The equity capital of BEL is ₹24,366 lakh, which is 1.32 per cent of the total equity and liabilities or total assets. Equity capital is the amount of capital contributed by the owners. In the company form of an organization, this equity capital is contributed in the form of small shares by many shareholders; hence, equity capital is also referred to as equity share capital or share capital. Owners of the company include any



individual or institution. The promoters are part of individual shareholders group. When the share capital given in balance sheet is divided by face value per share, it gives the number of outstanding shares of the company. Normally, face value per share and number of outstanding shares of a company are given in the footnotes of a balance sheet.

Other equity is the second and final item of equity. In the case of BEL, it is ₹751,735 lakh, and it is 40.65 per cent of the total equity and liabilities or total assets. A part of earnings retained within the companies after paying dividends is called other equity. The earnings distributed to owners of the company are called dividend. For example, a company made a profit of ₹100 and dividend distributed to the owners is ₹40. The other equity in this example is ₹60. This other equity is the cumulative item from the date of commencement of the company to the balance sheet date. For example, the other equity of a company in the first year is ₹100, in the second year is ₹200 and in the third year is ₹300; the other equity in third year-ending balance sheet would be ₹600. As other equity is the sum of profits remained within the company after paying the dividend, this item of the balance sheet is also popularly known as retained earnings in other countries. Sometimes, unlisted companies refer to this item of balance sheet as reserves and surplus.

Thus, the equity share capital and other equity are obligations owed to the company's owners by the company.

LIABILITIES IN DETAIL

The financial obligations owed to outsiders (other than the owners of the company) by the company are called liabilities. The liabilities of the company may be related to borrowings from the banks or other financial institutions or public,



payments to be made to the vendors of the company for credit purchases made from the vendor, arrears payable to the employees, etc. Such financial obligations of the company payable to the outsiders are classified into non-current liabilities and current liabilities.

Non-current Liabilities

The liabilities payable by the company after one-year period from the date of balance sheet are called non-current liabilities. As these liabilities are payable after one-year period, these are referred to as long-term liabilities of the company. There are six most frequent non-current liabilities in the balance sheet of most of the companies, which are as follows.

1. Financial liabilities: These are long-term liabilities to be paid to the outsiders after completion of one year from the date of balance sheet. The liabilities which require payments in future are known as financial liabilities. Borrowings and trade payables are the frequent financial liabilities as explained below.

a. Borrowings: In the case of BEL, borrowings are ₹3,333 lakh, amounting to 0.18 per cent of the total equity plus liabilities. These long-term borrowings of the company include term loans from banks and others, bonds or debentures (borrowings through issue of bond), deposits made by individuals or institutions with the company, loans and advances from parent company or subsidiary company, liabilities related to leases, etc.

b. Trade payables: This is a long-term financial obligation to suppliers as a result of credit purchase of goods and services. This long-term liability does not exist in the case of BEL balance sheet.



c. Other financial liabilities: This liability is a small amount of ₹123 lakh in the balance sheet of BEL, amounting to 0.01 per cent of the total liabilities and equity or total assets. The long-term other financial liabilities may include several other miscellaneous financial obligations such as security deposits made by others, current portion of long-term borrowings, unpaid matured deposits and unpaid dividend.

2. Provisions: In the case of BEL, this liability is ₹82,249 lakh, amounting to 4.45 per cent of the total liabilities and equity or total assets. These are the financial obligations of the company for different stakeholders. However, the amount of financial obligation is based on the scientific estimation of the managers of the company. For example, the provision for warranty cost of the automobile products sold by automobile companies is based on the estimation by the company. Similarly, the provision created by companies for fringe benefits of the employees such as leave encashment, gratuity and pension are based on the estimated last-month basic pay of the employees in the month of retirement or resignation from the company.

3. Deferred tax liabilities: Non-current deferred tax liability is the financial obligation of a company to the government to pay taxes after one year from the date of balance sheet due to underpayment of taxes in the current and previous years due to some legal reasons. There is no such liability in the case of BEL.

4. Deferred income: In the case of BEL, it is ₹3,298 lakh, which is 10.18 per cent of the total assets. The income received in advance from outside individuals and entities is called deferred income. This income is related to future long period but received either in current year or previous years. As this income is related to the future period, it must be deferred to future period and treated as a liability in the current period.



For example, an employee receives his salary for March 2020 on 31 March 2020 after working for that month and also receives advance salary for April and May 2020 on 31 March 2020 itself as advance to meet her/his family function scheduled in the first week of April 2020. In personal finance perspective, this advance income received for two months is a liability in the balance sheet of that employee as on 31 March 2020. It is the liability as on 31 March 2020 because the employee has an obligation to either work for next two months without salary or return the advance salary to the employer. If this advance income is related to the next financial year, it appears as current liability.

5. Deferred revenue: This is an advance revenue received either in the previous years or current year for goods and services to be delivered to customers after one year from the date of balance sheet. For example, the advance revenue collected by Boeing Company or Airbus for delivering aircrafts to airline service providers is deferred revenue in the books of Boeing or Airbus. Companies may show this as a separate liability item or may club with other long-term liabilities in the balance sheet. In the case of BEL, this liability does not exist as a separate item.

6. Other long-term liabilities: Such liability of BEL is ₹1,036, amounting to 0.06 per cent of the total liabilities and equity or total assets. These are any other long-term liabilities of the company not listed in any of the long-term liabilities mentioned above. These include long-term trade payables and any other liability. BEL's other long-term liabilities include deferred revenue.

Current Liabilities

The liabilities payable by the company within one-year period from the date of the balance sheet are called current liabilities.



As these liabilities are payable within one-year period, they are also referred to as short-term liabilities of the company. There are four most frequent current liabilities in the balance sheet of most of the companies. They are short-term borrowings, short-term provisions, deferred tax liabilities and other current liabilities.

1. Trade payables: In the case of BEL, this liability is ₹140,015 lakh, amounting to 7.57 per cent of the total liabilities and equity. This is one of the big current liabilities of the companies to be payable to suppliers in the next one year. This liability is because of the credit purchase of goods and services from the suppliers. It is part of the financial liability as it requires financial payment to outsiders.

2. Short-term borrowings: This is another kind of financial liability which requires payment to outsiders within one year from the date of balance sheet. Short-term borrowings include loans payable on demand, loans and advances from parent or subsidiary companies, and deposits. There are no short-term borrowings in the balance sheet of BEL.

3. Short-term provision: In the case of BEL, short-term provision is ₹43,795 lakh, amounting to 2.37 per cent of the total liabilities and equity. These are short-term estimated liabilities such as provision for employees' benefits related to leave encashment and gratuity, provision for warranties, provision for legal cases, etc. These are short-term obligations to be honoured by the company in the next one year from the date of balance sheet.

4. Other current liabilities: In the case of BEL, other current liabilities are ₹714,370 lakh, amounting to 38.63 per cent of the total liabilities and equity. These are other short-term liabilities of the company to be paid in the next one year from the date of balance sheet. These liabilities include interest



expense incurred but not paid, salary expenses incurred but not paid, current maturities of long-term borrowings, revenues received in advance, unpaid dividends, unpaid matured deposits, etc. In the case of BEL, this liability also includes deferred revenue and the revenue received in advance from customers for goods and services to be delivered in the next one-year period.

5. Deferred tax liabilities: These are additional taxes to be paid in the next one year due to underpayment of taxes either in the current year and/or in the previous years. There are no short-term borrowings in the balance sheet of BEL.

In summary, a balance sheet is a statement of multiple sources of funds and application of funds which are known as liabilities and assets, respectively. This statement of assets and liabilities and equity is on a particular date. These assets are broadly classified as non-current and current assets. The assets that would be used in the next one year from the date of balance sheet are called current assets and the assets that would be used after one year from the date of balance sheet are called non-current assets. The inventory held in the process of production or sale is an example of current assets, and plant and buildings are the examples of non-current assets. Similarly, the sources of funds are broadly classified as equity and liabilities. The funds which belong to the owners of the company are called equity, and the funds that are generated from non-owners (such as bankers and suppliers) are known as liabilities. Liabilities are further classified as non-current liabilities and current liabilities. The liabilities that would be paid by the company to others within one year from the date of balance sheet are called current liabilities, and the liabilities that would be paid by the company to others after one year from the date of the balance sheet are called non-current liabilities. Liabilities payable to suppliers because of credit purchase



of material are an example of current liability, and long-term loans from banks are an example for non-current liability.

WORKING OUT THE BALANCE SHEET

The second learning objective of this chapter is using the balance sheet to understand the financial health of a company by applying 10-point checklist. BEL's balance sheet presented in Table 1.1 is being taken as a case to understand the contents of the balance sheet and using this balance sheet to understand the interpretation of the balance sheet. After understanding the contents of the balance sheet, the users of the financial statements can use the 10-point checklist to interpret the balance sheet.

Checkpoint 1. What are the major assets of the company?

Generally, a balance sheet has 10–15 line items as assets. The user of the financial statements should identify what the two or three major assets of the company are from the list of the assets. The user should compare each asset's value as a percentage of total assets to identify the major assets. The line items with top two or three percentage would be taken as major assets. In the case of BEL, the balance sheet shows that accounts receivables, inventory and PPE are the three major assets for the year 2017–2018. The accounts receivable is the amount receivable from the clients of BEL in the next one year from the date of the balance sheet. The accounts receivable asset constitutes 30.85 per cent of the total assets. The inventory, which includes raw material, work in progress and finished goods, is the second biggest asset with 24.81 per cent of total assets. The third biggest asset is PPE, which is used in the process of production of goods and



services. This asset constitutes 8.68 per cent of the total assets. The interpretation of whether the investment in these major assets is lower or higher or appropriate must be judged by the user of the balance sheet with sufficient knowledge of the product, business and company. If the reader of the balance sheet feels that there is overinvestment or underinvestment in any of the assets, he/she may plan for correction. Similarly, the reader of the balance sheet has to apply his/her general business knowledge to understand the health or quality of these individual assets. A manager by cutting the investments in the case of excessive assets and investing more in the case of deficit assets can improve the financial condition as well as financial performance of his/her company.

Checkpoint 2. What are the major sources of the funds of the company?

Understanding the major sources of funds is one of the important things to know from the balance sheet. Based on the balance sheet, a user can identify that other equity, other current liabilities and trade payable (current liability) are the three major sources of funds to BEL company. Among these three, other equity constitutes 40.65 per cent and other current liabilities constitute 38.63 per cent of the total equity and liability. As mentioned in the previous section, the other equity is a part of earnings retained within the company after paying dividend to the owners. This is a cumulative figure from the commencement year of the company. Thus, this other equity being the biggest line item on equity and liability side of the balance shows that cumulative retained earnings are the biggest source of funds to this company. The other current liabilities which are 38.63 per cent of the total equity and liabilities indicate the second biggest source of funds. In this company, the other current liabilities include

advances received from customers for progress in production, deferred revenue received from customers, statutory liabilities and others. Thus, the other current liability is the second biggest source of funds to the company and then followed by accounts payables, the amount payable to vendors/suppliers as a result of credit purchases of goods and services. A manager of a company should identify the sources of funds with lower cost and maximize such sources of funds. Such managerial activity would enable the company to maximize the financial condition as well as financial performance.

Checkpoint 3. What is the value of the company based on the balance sheet?

The value of the company is one of the most sought-after indicators in the business community. The balance sheet provides the value of the company as per accounting books. Hence, this value is also known as book value of the company or net worth of the company. As it is a readily available figure in the balance sheet, the reader of the balance sheet can answer this question without applying any formulas to calculate. The equity line item in the balance sheet of any company is the book value or net worth of that company. According to the balance sheet of BEL as on 31 March 2018, the book value or net worth of the company is ₹776,101 lakh. The increase in the book value or net worth of the company would enhance the financial condition of the company.

Checkpoint 4. What is the value per share?

After understanding the net worth or book value, the computation of net worth or book value per share is simple



to compute. When the book value of the company is divided by the number of equity shares outstanding, it would be book value or net worth per share. In the case of BEL, the book value of the company is ₹776,101 lakh and number of shares outstanding are 2,436,592,943 as on 31 March 2018. Thus, the book value per share would be ₹31.8520. The user of the balance sheet may compare this book value per share with competitors' book value per share or historical book value per share of the company for better evaluation. The book value per share could be maximized either by maximizing the book value of the company or by minimizing the number of equity shares outstanding or both. The increase in book value per share would also improve the financial status of the company in the market.

Checkpoint 5. Is the company overvalued or undervalued in the market?

When the book value of the company is compared with its market value or when the book value per share of the company is compared with its market value per share, the user of the balance sheet would understand the market perception about the company. This ratio of market value to book value or market value per share to book value per share is called price-to-book (P/B) ratio. Generally, a ratio less than 1 may be known as undervaluation of the company and a ratio greater than 1 may be interpreted as overvaluation of the company, assuming that assets and liabilities are measured appropriately. The closing market price per share of BEL for the year ending 31 March 2018 was ₹142.05 and book value per share (as computed above) was ₹31.8520. Based on these two figures, P/B ratio of BEL would be 4.46 times. It means the market value of the company is 4.46 times of the book

value. According to the P/B ratio thumb rule of 1, BEL may be overvalued in the market.

Checkpoint 6. What is the tangible value of the company?

This is a conservative approach to the net worth or tangible value of the company. This approach to the value of the company or net worth of the company is suggested by Benjamin Graham, the father of value investing. This approach eliminates the value of the intangible assets such as goodwill, patents, trademarks and intangible assets under development from the balance sheet. According to this approach, the tangible book value of the company is equal to the book value of the company minus intangible assets of the company.

In the case of BEL, the book value of the company is ₹776,101 lakh, and its intangible assets (refer to Checkpoint 3) in the balance sheet are, as other intangible assets, ₹257 lakh and intangible assets under development amount to ₹43,735 lakh. The tangible book value or net worth of the company would be arrived by deducting these intangible assets from book value of the company (i.e., $776,101 - 43,735 - 257$). Thus, the tangible book value or net worth of this company is ₹732,109 lakh.

Checkpoint 7. What is the tangible value per share?

The book value per share could also be based on conservative approach. When the tangible book value of the company, ₹732,109 lakh (refer to Checkpoint 6), is divided by the number of equity shares outstanding on the date of the balance sheet, 2,436,592,943 (refer to Checkpoint 4), the quotient is the



tangible book value per share, that is, ₹30.0464 per share. Again, this tangible book value per share could be used for evaluation of the value of the company. The managers should focus on improving the tangible net worth when there is choice between total net worth and tangible net worth of their company.

Checkpoint 8. What is the liquidation value of the company?

The value of a company if that company is liquidated is known as liquidation value. This approach assumes that the company is closed and its assets are sold out in the market. It is suitable to the bankrupt or sick companies or a company on the verge of bankruptcy. Under this approach, first, the sale proceeds from the sale of each asset appearing in the balance sheet are estimated. Then, all the liabilities of the company are deducted from the sum of these estimated sale proceeds of the assets to get the liquidation value of the company.

For example, the hypothetical sum of net proceeds from the sale of all the assets is ₹3,000,000 lakh. The existing total liabilities to be repaid if the company is liquidated is ₹1,072, 989 lakh, which is the sum of current liabilities and non-current liabilities of BEL as on 31 March 2018. When these liabilities are reduced from the sum of net proceeds from the sale of all assets of BEL, the balance amount is ₹1,927,011 lakh. This is the liquidation value of the company. The liquidation value per share could be computed by dividing the liquidation value of the company by the number of shares. Thus, the liquidation value per share of BEL based on hypothetical liquidation value is ₹79.08. This liquidation value could help the users in understanding the value of the company if it is closed.



Checkpoint 9. What is the short-term financial health of the company?

After understanding the issues mentioned above from the balance sheet, it is important to understand the ability of a company in short-term (normally, one-year period) future to pay its current liabilities. The short-term financial ability of the company depends on not only current liabilities but also current assets available for meeting the payment obligations. In simple terms, the reader of the balance sheet who needs to understand the short-term financial health of a company can compute that company's ratio of current assets to current liabilities. This ratio is popularly known as current ratio. This ratio indicates amount of INR available as current assets for one INR of current liability. A current ratio of 1 is minimum for safe liquidity position of a company. A current ratio of greater than 2 is treated as safe liquidity condition of a company.

The non-current assets such as land, building and patents do not matter for short-term financial health of a company. For example, a person is going for a picnic in a remote place where there are no friends, relatives and ATM machines for a month; his/her financial health during that particular picnic month depends on how much hard currency he/she has. In this example, the long-term assets, land and building, for example, do not matter to the financial health of the tourist during that month.

Thus, the ratio of the current assets to the current liabilities based on the balance sheet is the most frequently used and easily computable indicator of the short-term financial health of the company. In the case of BEL, the ratio of current assets



and current liabilities based on the balance sheet information is 1.45 times during the year ending 31 March 2018. It means that BEL's short-term resources are 1.45 times of short-term obligations. In other words, BEL has ₹1.45 for every ₹1 of short-term obligations. The most difficult question is whether this current ratio of 1.45 is adequate or inadequate or excessive. This depends on the cost of illiquidity (i.e., the cost of running out of cash and other short-term resources), opportunity cost of the funds invested in short-term resources, risk appetite of the company, nature of the business, competition, product and so on.

Checkpoint 10. What is the long-term financial health of the company?

After understanding the short-term financial health of the company, the user of the balance sheet can focus on the balance sheet to understand the financial ability of the company in the long term, in other words, the financial ability of the company in repaying total liabilities. The long-term financial health of the company depends on total liabilities and total equity. The relation between total liabilities and total equity is called debt-to-equity ratio. It helps in understanding how a company is financing its operations and investments. If this ratio of total liabilities to equity is 1, it means that the company is financing through debts and equity equally. However, when this ratio is less than 1, it means that the company is dependent more on equity funds than liabilities. Similarly, when this ratio is greater than 1, it shows that the company is more dependent on debts. In the case of BEL, this ratio was 1.38 times. It implies that the liabilities are ₹1.38 for every ₹1 of equity funds. This company is financing its operations and investments through more liabilities than equity funds. The most difficult question is how risky is this ratio of 1.38 times of debt-to-equity. The

answer to this question depends on debt-to-equity ratio of the same company in the past, competitor, industry, and nature of business and business strategies.

IN CONCLUSION

The beginners of financial statements should note that understanding the line items of the balance sheet is a prerequisite to the analysis of the short-term financial health and long-term financial health of a company using its balance sheet. The 10 checkpoints make the evaluation of financial health using balance sheet focused and objective. These 10 checkpoints could be used to improve the quality of assets, cost of sources of funds, short-term financial health, long-term financial health and market valuation of the company.

QUIZ: READ THE BALANCE SHEET

Amtek Auto Limited Balance Sheet as on 31 March 2016 (₹ in Lakh)

Particulars	Note No.	As on 31 March 2016	As on 31 March 2015
1. Equity and Liabilities			
a. Shareholder's fund (equity)			
i. Share capital	2.1	4,495.11	4,495.11
ii. Reserve and surplus (other equity)	2.2	438,290.71	504,374.86
		442,785.82	508,869.97
b. Non-current liabilities			
i. Long-term borrowings	2.3	566,503.75	603,224.45

(continued)



(continued)

Particulars	Note No.	As on 31 March 2016	As on 31 March 2015
ii. Deferred tax liabilities (net)	2.4	18,151.85	45,502.12
iii. Other long-term liabilities	2.5	37,150.00	12,250.00
iv. Long-term provisions	2.6	1,730.65	1,841.77
		623,536.25	662,818.34
c. Current liabilities			
i. Short-term borrowings	2.7	237,210.07	208,324.15
ii. Trade payables	2.8	20,015.64	10,157.22
iii. Other current liabilities	2.9	263,338.52	226,733.49
iv. Short-term provisions	2.1	193.40	103.24
		520,757.63	445,318.10
Total		1,587,079.70	1,617,006.41
2. Assets			
a. Non-current assets			
i. Fixed assets			
• Tangible assets	2.11	891,835.95	900,555.26
• Capital work-in-progress		66,127.40	83,756.46
ii. Non-current investments	2.12	166,650.92	172,997.76
iii. Long-term loans and advances	2.13	171,799.82	152,837.44
		1,296,414.09	1,310,146.92



Particulars	Note No.	As on 31 March 2016	As on 31 March 2015
b. Current assets			
i. Current investments	2.14	1,806.29	2,833.56
ii. Inventories	2.15	159,969.48	160,607.06
iii. Trade receivables	2.16	85,364.59	90,449.91
iv. Cash and cash equivalents	2.17	6,563.16	7,811.94
v. Short-term loans and advances	2.18	36,962.09	45,157.02
		290,665.61	306,859.49
Total		1,587,079.70	1,617,006.41

Source: Amtek Auto Limited. 2016. *Annual Report, 2015–2016*. New Delhi: Amtek Auto Limited.

Answer¹ the following 10 multiple-choice questions using the balance sheet of Amtek Auto Limited.

- What is the biggest asset of the company as on 31 March 2016?
 - Cash and bank
 - Inventory
 - Tangible assets
- What is the biggest source of funding as on 31 March 2016?
 - Reserves and surplus (other equity)
 - Long-term borrowings
 - Short-term borrowings
- What is the book value of the company as on 31 March 2016?
 - ₹438,290.71 lakh
 - ₹1,587,079.70 lakh
 - ₹442,785.82 lakh



4. Debt-to-equity ratio (i.e., total liabilities divided by shareholders' funds) of this company as on 31 March 2016 is 2.58 times. What does it indicate about the company?
 - a. The company is more dependent on owners' funds.
 - b. The company is more dependent on liabilities.
 - c. The company is more dependent on profits of the company.
5. Based on debt-to-equity ratio from Question 4 and current ratio (i.e., current assets divided by current liabilities), 0.56, of the company as on 31 March 2016, what is the perceived financial health of the company?
 - a. Strong financial condition
 - b. Stable financial condition
 - c. Weak financial condition

¹ Answers of quiz

1. c 2. b 3. c 4. b 5. c



* 2 *

WHY YOU MUST UNDERSTAND THE INCOME STATEMENT?

There are three major activities in any organization: financing, investing and operating. A balance sheet is a summary of financing and investing activities, and a statement of profit and loss is a summary of economic transaction related to operating activities such as research, designing, purchase, training, production, advertising, marketing, sales, distribution and post-sale services. These operating activities broadly result in sales revenue and expenses. Sales activity will generate sales revenue, and other operating activities such as research, training, production and distribution result in expense. The statement of profit and loss is a statement of these revenues and expenses of a company in a particular period. This statement is also known as income statement. Profit is the excess of revenue over expenses in a certain period and vice versa. The income statement shows the financial performance of a company during a particular period. The statement of profit and loss of a company could be for a particular month or quarter or half year or a year, etc.

This chapter focuses on understanding the contents of statement of profit and loss, and performance analysis using income statement. BEL's statement of profit and loss for the financial year 2017–2018 is presented in Table 2.1 to understand the contents and performance analysis using 10 checkpoints.



Table 2.1: Statement of Profit and Loss of BEL for the Year Ending 31 March 2018 (₹ in Lakh)

S. No.	Particulars	Note No.	For the Year Ending 31 March 2018	For the Year Ending 31 March 2017
1.	Revenue from operations	23	1,040,061	914,044
2.	Other income	24	20,038	47,101
3.	Total income (1 + 2)		1,060,099	961,145
4.	Expenses			
	a. Cost of material consumed		460,182	429,653
	b. Cost of stores and spares consumed		3,764	3,288
	c. Consumption of stock in trade		49,680	50,281
	d. Changes in inventories of finished goods, work in progress and scrap	25	37,889	(41,913)
	e. Excise duty		7,828	52,856
	f. Employees' benefits expenses	26	177,233	154,831
	g. Finance costs	27	127	1,178
	h. Depreciation and amortization expense	28	25,100	19,152
	i. Other expenses	29	103,512	88,877
	Total Expenses (a-i)		865,315	758,203



S. No.	Particulars	Note No.	For the Year Ending 31 March 2018	For the Year Ending 31 March 2017
5.	Profit before exceptional items and tax (3-4)		194,784	202,942
6.	Exceptional items		0	0
7.	PBT		194,784	202,942
8.	Tax expenses	10		
	Current tax		45,091	51,500
	Earlier years		(481)	(873)
	Deferred tax		10,245	-2,447
	Total provision for taxation		54,855	48,180
9.	Profit for the year (7-8)		139,929	154,762
10.	Other comprehensive income/loss			
	Items that will not be reclassified subsequently to profit or loss			
	• Re-measurement of net defined benefit liability/assets		219	(13,890)
	• Equity instrument through other comprehensive income		1	1

(continued)



(continued)

S. No.	Particulars	Note No.	For the Year Ending 31 March 2018	For the Year Ending 31 March 2017
	• Income tax relating to these items		(75)	4,704
	• Total other comprehensive income/ (loss) (net of tax)		145	(9,185)
11.	Total comprehensive income for the year (9 + 10)		140,074	145,577
12.	Earnings per equity share (face value ₹1 each)	30(1)		
	a. Basic EPS (in ₹)		5.7	6.03
	b. Diluted EPS (in ₹)		5.7	6.03

Source: Bharat Electronics Limited. *Annual Report, 2017–2018*. Bengaluru: Bharat Electronics Limited.

STATEMENT OF PROFIT AND LOSS SIMPLIFIED

REVENUE FROM OPERATIONS

Table 2.1 shows that BEL's revenue from operations is ₹1,040,061 lakh. This revenue has been achieved through sale of its products, services and other operating activities. The other operating income from other operating activities normally includes revenue earned through sale of scrap, rent earned, collection from employees for transportation, electricity, water and others.



In general, revenue from operations is the top line of the income statement. It is the amount of revenue earned through delivery of goods and services to the client during a particular period either in cash or credit. This earning is from the core activities of the company.

OTHER INCOME

Another income we discover is the other income that BEL has earned which amounts to ₹20,038 lakh as other income (net) during the financial year 2017–2018. This is 1.93 per cent of revenue from operations. Sum of revenue from operations and other income is known as total income.

This income has been earned from non-core activities and, hence, is termed as other income. The frequent major sources of other income are dividend earned from investments, interest earned from deposits, interest income from staff, profit on sale of PPE, foreign exchange gain, income tax refunds, etc. The other income is always shown after deducting all related expenses or losses. Thus, such non-operating income is reported as other income (net) in the statement of profit and loss.

EXPENSES

Now that we have discussed two types of income, wonder what sort of expense BEL has. All the resources sacrificed to generate revenue in an accounting period are called expenses. A few frequent and major expense items are material expense, manpower expense, finance cost on borrowed funds, depreciation and amortization expense, tax expense and other expense. Each of these expenses are presented briefly as follows.



Material Expenses

In the statement of profit and loss, we see that BEL incurs ₹551,515 as material expense which is 53.03 per cent of its revenue from operations. This expense is the sum of all the material resources sacrificed to generate the revenue from operations in the income statement in a particular period. This includes cost of material consumed, cost of stores and spares consumed, consumption of stock in trade and changes in inventories of finished goods and work in progress and scrap. Generally, material expense is high in case of manufacturing and fast-moving consumer goods companies. In case of software companies, financial companies and airline companies, the material expense is either small or negligible due to the nature of such companies. Whether this 53.03 per cent of material expense is higher or lower depends on the nature of product, business and strategy. This current-year material expense percentage could be compared with historical percentages and reasons for difference could be identified. These percentages of material expense over a period should be analysed for major business units, segments, products, etc. Such detailed analysis of material expense may help in identifying the area where there is improvement or decline in efficiency in utilization of material expense.

Manpower Expense

Manpower is one another big expense of most of the corporate organizations. In case of BEL, it is ₹177,233 lakh amounting to 17.04 per cent of revenue from operations. This is also referred to as employee cost or employees' benefits expenses. This expense includes not only salaries and wages paid to employees but also contribution of the company for post-retirement benefits of the employees such as contribution for gratuity, provident fund, pension fund, retired employees'



health benefits and welfare activities. Generally, this expense is high in case of technology companies due to labour intensity. The evaluation of manpower expense percentage depends on again nature of product, business, technology and strategy. Like material expense percentage, the managers should compare and analyse to identify the reasons for changing manpower expense over a period of time. Such analysis should be done unit wise, segment wise and branch wise to reward the reduction in manpower expense and to take corrective measures if there is increase in labour expense percentage due to avoidable reasons.

Depreciation and Amortization

Material expense and manpower expense were easy to understand. However, depreciation and amortization require special attention because this expense is the result of accounting. In case of BEL, the depreciation and amortization are ₹25,100 lakh which is 2.41 per cent of sale revenue from operations. Now, let us understand what this depreciation and amortization expense is. A part of non-current asset sacrificed during income statement period is known as depreciation and amortization. This is indirectly related to revenue from operations generated in the current accounting period and charged based on the income statement period. Hence, it is also known as period expense. This resource is sacrificed in the form of wear and tear of the asset. The expenses related to wear and tear of tangible non-current and intangible non-current assets are called depreciation and amortization, respectively. For example, on 1 April 2017, a company purchased machine and patents with an economic life of 5 years each for ₹100 lakh and ₹50 lakh, respectively. The annual depreciation and amortization for the income period 2017–2018 would be ₹20 lakh (on machine) and ₹10 lakh (on patents). Generally, this expense is high in



case of capital-intensive companies such as airline companies and electricity-generating companies.

Finance Cost

It is ₹127 lakh which is 0.01 per cent of revenue from operations. This is another period-specific expense related to borrowings. The interest cost on borrowings during the period of statement of profit and loss is called finance cost. In the case of BEL, this expense includes interest expense on dues to micro institutions, interest expense on income tax dues and loan processing charges. The finance cost is a financial burden on the company with extra financial risk. The users of financial statements should check whether the company has enough profit and cash flows to pay finance cost.

Tax Expense

The tax expense of BEL is ₹54,855 lakh which is 5.27 per cent of revenue from operations. This is the easiest expense item to understand. This is a part of profit of a company paid to government. It is needless to mention that this expense is incurred only when a company makes profit. If there is loss (which is excess of expenses over revenue), there would not be any tax expense.

Other Expenses

The other expense of BEL is ₹103,512 lakh amounting to 9.95 per cent of revenue from operations. This includes remaining all expenses which are not shown as a separate line item of expense in statement of profit and loss. In case of manufacturing companies, this may include power and fuel charges, water charges, rent, insurance premium, audit remuneration, repairs and maintenance, bank charges, printing and stationery,



advertisement, travelling expense, hiring expense, after-sale service, corporate social responsibility expense, telephone expense, etc. This other expense would be significant as it consists many small expenses.

EXCEPTIONAL ITEMS

Exceptional items are defined as those items which in management's decision are part of ordinary activities of the company; however, these items need to be disclosed separately due to their size of transactions. This can be a negative or positive amount indicating either loss or gain to the company. If it is positive, it adds to the profit, and if it is negative, it reduces the profit. Profit or loss on unusual sale of non-current assets, losses due to disasters, loss due to litigation settlement, etc., are some of the examples for exceptional items. This item is nil in case of BEL's income statement.

WHAT'S A PROFIT?

Profit or earnings is the excess of total income over total expenses. Total income includes revenue from operations and other income. There are multiple vague terms about profit or earnings. Some of the frequently used profit terms are gross profit, profit before interest and tax (PBIT), profit before tax (PBT), profit after tax (PAT), earnings before depreciation, amortization, interest and tax (EBITDA), basic earnings per share (EPS) and diluted earnings per share. User of income statement can choose the suitable indicator. These profit indicators are explained briefly as follows.

Profit before Tax

PBT of BEL is ₹194,784 lakh which is 18.73 per cent of revenue from operations. This is the difference between total income



which includes revenue from operations and other income and total expenses except income tax expense. In other words, profit earned before paying tax by a company during a particular period.

Profit after Tax

PAT of BEL is ₹139,329 lakh which is 13.45 per cent of revenue from operations. This is also known as bottom line or net income or profit for the period. This is the difference between total income and total expenses including tax expense. Total income includes revenue from operations and other income.

Profit before Interest and Tax

In most of the companies, this term has to be derived by the user of statement of profit and loss. As the name indicates, profit before deducting interest expense (or finance cost) and tax expense is called PBIT. There are two ways of deriving this indicator. One, deduct all the expenses except interest expense (or finance cost) and tax expense from total income to derive PBIT. Two, interest can be added back to PBT to derive PBIT. This profit indicator is also known as operating profit of the company. In case of BEL, PBT is ₹194,784 and interest expense is ₹127 lakh. The addition of these two figures is ₹194,911 lakh which is known as PBIT or operating profit of BEL during the year 2017–2018. This amounts to 18.74 per cent of revenue from operations.

Earnings before Depreciation, Amortization, Interest and Tax

This is another profit indicator used to understand performance of a company. It indicates cash profit. In other words,



EBITDA indicates the net cash generated from operations. This profit indicator is derived by adding depreciation, amortization and interest to PBT. Alternatively, EBITDA would be derived by adding depreciation, amortization, interest and taxes to PAT. In the case of BEL, PBT is ₹194,784 lakh, depreciation and amortization are ₹25,100 lakh and interest expense or finance cost is ₹127 lakh. Thus, the sum of these three indicators is EBITDA, that is, ₹220,011 lakh which is 21.15 per cent of revenue from operations.

Gross Profit

Although gross profit or gross margin is not readily available, it is the one of the frequently used profit indicators of financial performance. This is the difference between revenue from operations and manufacturing cost of goods sold. Only when cost of goods sold is given as an additional information, gross profit could be computed. In the case of BEL, it cannot be computed.

Other Comprehensive Income or Loss

BEL's total of other comprehensive income is ₹145 lakh during the year 2017–2018. Now, let us understand what this item is in accounting. There are certain transactions related to current-year income which are not allowed to be shown as either loss or gain in statement of profit and loss. Such gains or losses are shown as part of other comprehensive income and loss. Such excluded items from income statement are broadly classified into two categories. One, those items that would be reclassified to profit (in income statement) and two, those items that would never be reclassified to profit (in income statement). Gain or loss on revaluation of investments of the company classified as available for sale is an example of



items that would be reclassified to profit. Once such investments are sold out and the profit is realized, such profit will be transferred from other comprehensive income to profit in statement of profit and loss. Gain or loss on remeasurement of defined pension benefit liability is an example of items that would never be reclassified to profit in statement of profit and loss.

Basic EPS

Basic EPS of BEL is ₹5.70. This is the profit earned by a company per equity share. PAT is divided by number of equity shares outstanding to compute basic earnings per share. For example, if PAT is ₹800 and the number of equity shares is 100, then the basic EPS would be ₹8.00 which is 800 divided by 100.

Diluted EPS

Diluted EPS of BEL is ₹5.70, which is equal to basic EPS indicating non-existence of convertible equity shares. Diluted EPS is a conservative approach of computing earnings per share. PAT is divided by adjusted number of equity shares outstanding to compute basic earnings per share. The adjusted number of equity shares is existing number of equity shares plus all convertible securities into equity. For example, if PAT is ₹800 and the number of equity shares is 100, the basic EPS would be ₹8.00 which is 800 divided by 100. In addition to this, if a bank loan borrowed by this company could be converted into 10 equity shares by the bank, then the adjusted number of equity shares is equal to 110, that is, $100 + 10$. Thus, the diluted EPS would be ₹7.27, that is, ₹800 divided by 110 shares. As this is based on a conservative assumption that bank would convert its loan into equity shares of the company in future, this EPS is known as diluted EPS.



ANALYSIS OF INCOME STATEMENT

After understanding the contents of income statement, this section deals with how to read income statement by applying 10 checkpoints. The statement of profit and loss of BEL given in Table 2.1 is used as an example for financial performance analysis using 10 checkpoints. The objective of analysis of financial performance of a company is to identify the drivers of past and future sales and profitability of a company.

Checkpoint 1. What is the growth in revenue from operations?

Sales revenue of BEL for the year 2017–2018 is ₹1,040,061 lakh as compared to ₹914,044 during 2016–2017 showing 13.79 per cent growth in sales revenue from operation. The growth in top line of income statement is one of the most frequently tracked operating indicators by users of income statement. Particularly, when most of the companies in a particular industry are making losses, this sales revenue becomes even more important as a basis for valuation of the company and market share of the company. Therefore, one should review the growth in sales revenue of the companies. The analysts' perception about 13.79 per cent depends on the growth in sales revenue of the company in the previous year, industry and competitor. As an insider of the company while analysing the growth in revenue from operations at corporate level, he/she should also analyse the segment-wise, product-wise, region-wise, etc., growth in the sales revenue. This enables the analyst to identify growing and declining business units to plan differently for such two different categories of units.



Checkpoint 2. What is the net income margin of the company?

BEL's net income margin is 13.45 per cent. Net income margin is the ratio of net income to sales revenue. BEL's net income margin ratio in the year 2017–2018 is based on net income or PAT, which is ₹139,929 lakh, and sales revenue, which is ₹1,040,061 lakh. The net income margin and net income margin ratios are most frequently used indicators by different stakeholders of a company. Net income margin is one of the indicators of performance and driver of overall performance of the company. Whether this 13.45 per cent of net income margin is low or satisfactory or high depends on product, strategy, previous year margin, expected net income margin of the company and margins of the competitor and industry. The inside managers of a company should not just focus on corporate level net income margin, but also on net income margin from major product lines, major services, major regions, major customers, etc. This enables the managers to prioritize the resources for most profitable products and to take steps to increase the net income margins of other products.

Checkpoint 3. What is the growth in the net income of the company?

In the case of BEL, PAT in 2017–2018 is ₹139,929 lakh as compared to ₹154,762 lakh. This indicates a negative growth in PAT of 9.58 per cent during the year 2017–2018. The growth in PAT also helps in understanding the performance of the company in the current period as compared to previous period. The evaluation of this negative growth in PAT depends upon budgeted growth rate and growth rates of comparable



company from the industry. In addition to this, the inside managers compute and analyse growth in net income of multiple products, services, segments, etc., to identify the drivers of growth in net income at corporate level.

Checkpoint 4. What is the operating profit margin of the company?

Operating profit is defined as profit earned from core activities of a company. This profit excludes items such as other income, interest expense, tax expense and exceptional items. An easy way of computing operating profit is to undo the effect of other income, interest expense, tax expense and exceptional items from PAT. In the case of BEL, PAT is ₹139,929 lakh after adding other income ₹20,038 lakh and after deducting interest expense (or finance cost) ₹127 lakh and tax expense is ₹54,855 lakh. The exceptional item in case of BEL is nil. When other income is deducted and interest expense and tax expense are added back to PAT, it would be operating profit. Thus, the operating profit of BEL during the year would be ₹174,873 lakh. This profit as a percentage of revenue from operations is operating profit margin which is 16.81 per cent. The evaluation of 16.81 per cent depends on budgeted and previous year operating profit margins of the company and operating profit margins of competitor and industry. Sometimes, PBIT is also used as an alternative operating profit margin. However, this includes other income which is non-operating income.

Checkpoint 5. What is EBITDA as a percentage of sales revenue?



EBITDA is another alternative indicator of performance. This is used as cash profit indicator to understand net cash generating power of a company from operating activities. Alternatively, EBITDA would be derived by adding depreciation, amortization, interest and taxes to PAT. In the case of BEL, PBT is ₹194,784 lakh, depreciation and amortization are ₹25,100 lakh and interest expense or finance cost is ₹127 lakh. Thus, the sum of these three indicators is EBITDA, that is, ₹220,011 lakh, which is 21.15 per cent of revenue from operations. It means 21.15 per cent of revenue from operations is converted into net cash inflows from operating activities. The evaluation of this percentage depends on company, industry and economic factors. Generally, many analysts from outside the company analyse EBITDA at corporate level. However, such analysis inside the company for each segment, product, service, factor and region gives many insights for improving the business performance.

Checkpoint 6. What is the other income as a percentage of PAT?

The other income of BEL is ₹20,038 lakh amounting to 1.93 per cent of revenue from operations and 14.32 per cent of PAT. Other income is in the form of interest and dividend income earned from investments and profit on sale of non-current assets, and its contribution to PAT and revenue from operations should be lower. It should be lower because this income is not from core activities of the company. If it is lower, it shows the consistency in profit from core activities of the company. The question of whether these percentages are appropriate or not depend on the percentages of the company in the past and percentages of the industry. If other income is consistent in each period, it could be treated as operating profit.

Checkpoint 7. What are the major expenses?

In the case of BEL's income statement, cost of material consumed and employees' benefits expense are two major expenses. Material consumed is 44.25 per cent of revenue from operations and employees' benefits expense is 17.04 per cent of revenue from operations. Each line item of statement of profit and loss can be presented as a percentage of revenue from operations and such each percentage could be compared to competitors' and industry's percentages for evaluation. Profit or loss is the difference between total income and total expenses. It is essential to understand different heads of expenses and keep them under control. It is needless to mention that managers must focus on minimizing the expenses as a percentage of revenue from operations to maximize the business profitability. The analysis of major expenses should be done as compared to percentages from previous years and targeted figures. Every year, the managers should try to minimize the expenses on continuous basis to have cost advantage and price advantage in the market to maximize sales revenue as well as profit.

Checkpoint 8. What is the key expense of the company?

Key expense is the expense which is indirectly related to short-term or/and long-term growth in sales revenue from operations and profitability of the company. The key expense is different in different companies and industries depending on their business model and strategy. Research and development expense in case of pharmaceutical companies, marketing expense in case of fast-moving consumer goods companies and labour



expense in case of technology companies are the some of the examples of key expenses. It is important to understand the relation between key expense and revenue from operations or profitability to maximize the financial sustainability of the company. The inside managers of a company should try to monitor their company's expenses properly. For example, if research and development expenses are high and are increasing gradually, then it is good for creation of know-how. However, the increase in research and development expense reduces the profits of the current year. The managers need to balance these key expenses.

Checkpoint 9. What is the price-to-earnings (P/E) multiple of a company?

P/E multiple is defined as market price for every ₹1 of earnings of a company. Market price per share divided by EPS is the P/E ratio. If market price per share of a company is 22 and EPS is 2, the P/E multiple would be 11 times. It means that market is willing to pay ₹11 for every ₹1 of EPS of the company. Assuming other things are constant, if this company can increase EPS from ₹2 to ₹3, then the market price will increase to ₹33 from ₹22. This P/E multiple of a company can be compared to P/E multiple of competitor(s) and/or industry to understand the undervaluation or overvaluation of the earnings of a company. Assuming other things are constant, if P/E multiple of a company is lower than industry P/E multiple, then it implies undervaluation of earnings of the company and vice versa.

Checkpoint 10. What is price-to-sales (P/S) multiple of a company?

When earnings of a company or industry are in negative (i.e., losses), it is not possible to use P/E multiple for analysis. In such case, one can use P/S sales ratio to understand the market valuation of the company. When online retail companies are into losses or insurance companies are into losses, P/S ratio can be widely used for analysis. If market price per share of a company is ₹22 and sales are ₹66, the P/S multiple would be 0.33 times. It means that market is willing to pay ₹0.33 for every ₹1 of sales of the company.

IN CONCLUSION

The statement of profit and loss is the summary of operating activities such as research, production, marketing, sales, distribution and post-sales service. All these operating activities result in either revenue or expenses. Thus, the statement of profit and loss is the summary of revenue and expenses and difference between these two items as either profit or loss. Managers should have thorough understanding of driver of revenue, expenses and profit. This is possible when revenues, expenses and profitability of major products, services, segments, units, branches, customers, etc., are analysed. Such analysis should be done over a period of time to understand the reasons for favourable and unfavourable deviations in sales revenue and net income of the major products, services, etc. This statement helps in understanding the financial performance of a company in a specific period. Using certain checkpoints presented in this chapter, the managers can identify the focus areas to maximize the sales revenue from operations and net income of their company.



QUIZ: HOW TO READ INCOME STATEMENT

Statement of Profit and Loss of Bharat Dynamics Limited (BDL)
for the Year Ending 31 March 2019 (₹ in Lakh)

S. No.	Particulars	Note No.	For the Year Ending 31 March 2019	For the Year Ending 31 March 2018
1.	Revenue from operations	29	306,934.97	458,759.75
2.	Other income	30	13,598.60	17,255.91
3.	Total income (1 + 2)		320,533.57	476,015.66
4.	Expenses			
	Cost of material consumed	31	181,896.95	290,759.21
	Changes in inventories of finished goods, work in progress and scrap	32	(16,587.40)	(5,370.00)
	Employees' benefits expense	33	53,420.88	52,933.98
	Finance costs	34	423.07	327.92
	Depreciation and amortization expense	35	8,250.21	6,347.75
	Other expenses	36	25,993.40	53,634.39
	Total Expenses (4)		253,397.11	398,633.25
5.	Profit/(Loss) before exceptional items and tax (3–4)		67,136.46	77,382.41

S. No.	Particulars	Note No.	For the Year Ending 31 March 2019	For the Year Ending 31 March 2018
6.	Exceptional items		0.00	0.00
7.	PBT		67,136.46	77,382.41
8.	Tax expenses			
	a. Current tax	28C	22,185.99	29,678.52
	b. Deferred tax	28C	2,691.75	(5,111.27)
	Total tax expenses		24,877.74	24,567.25
9.	Profit for the year (7-8)		42,258.72	52,815.16
10.	Other comprehensive income			
	Items that will not be reclassified subsequently to profit or loss			
	a. Re-measurement of net defined benefit liability/ assets	37(4)	(1,646.05)	0
	b. Income tax relating to these items that will not be reclassified to profit or loss	28C	575.2	0
	Total other comprehensive income/(loss)		(1,070.85)	0.00

(continued)



(continued)

S. No.	Particulars	Note No.	For the Year Ending 31 March 2019	For the Year Ending 31 March 2018
11.	Total comprehensive income for the year (9 + 10)		41,187.87	52,815.16
12.	Earnings per equity share (face value ₹1 each)			
	Basic and diluted EPS (in ₹)	37(3)	23.06	26.65

Source: Bharat Dynamics Limited. 2019. *Annual Report, 2018–2019*. Hyderabad: Bharat Dynamics Limited.

Answer¹ the following five multiple-choice questions using the statement of profit and loss of BDL.

- What is the net income (or PAT) of BDL during 2018–2019?
 - ₹320,533.57 lakh
 - ₹42,258.72 lakh
 - ₹67,136.46 lakh
- What are the two major expenses of BDL?
 - Material expense and depreciation expense
 - Employees' expense and other expense
 - Material expense and employees' expense
- What is the net income ratio of BDL during 2018–2019?
 - 11.10%
 - 13.18%
 - 21.87%



4. If comparable companies' P/E multiple is 12 times, what should be the market value per share of BDL?
 - a. ₹276.72
 - b. ₹120.00
 - c. ₹23.06
5. How is BDL's net income margin during the year 2018–2019 as compared to the previous year?
 - a. Less than the previous year
 - b. It is equal to the previous year
 - c. Better than the previous year

¹ Answers of quiz

1. b 2. c 3. b 4. a 5. c



* 3 *

CHECK THE FINANCIAL HEALTH OF YOUR ORGANIZATION

One of the aims of the companies is to provide constant return to equity shareholders. The improved profitability and financial health of a company enables the managers to keep equity shareholders satisfied with better and stable returns. Identification of drivers of profitability and financial conditions in the past as well as in the future enables the managers in achieving their company's financial goals. Analysing the statement of profit and loss and balance sheet helps in the identification of drivers of financial performance and financial conditions. Therefore, understanding the analysis of statement of profit and loss and balance sheet is essential for managers and other users of financial statements.

After gaining the knowledge of the contents of the balance sheet and statement of profit and loss and basics of reading these financial statements in the previous two chapters, this chapter enables in understanding the relation between these two financial statements, techniques of financial statement analysis such as vertical analysis, horizontal analysis and ratio analysis, and drivers of profitability of a company.

First, let us understand the relation between balance sheet and statement of profit and loss in a layman perspective. Income statement is part of balance sheet of a company. For



example, a company's revenues and expenses are ₹100 and ₹70, respectively. In this example, the net income is ₹30. Let us assume that this company has paid a dividend of ₹10 to equity shareholders. Then, the retained earnings or other equity is ₹20 which is part of net income retained within the company after paying dividend. This retained earnings or other equity is part of balance sheet under the heading equity. Thus, indirectly, the revenues, expenses and dividend are part of balance sheet. Thus, statement of profit and loss is an offshoot of balance sheet in the form of other equity. As profit or loss is part of balance sheet, the revenue transactions and expense transactions are also part of balance sheet. The effect of each revenue and expense transaction on income statement and thereafter on balance sheet is described in detail in Chapter 4.

As balance sheet and income statement are interrelated, the use of these statements jointly for analysis of financial health and performance is essential for understanding financial health and financial performance of a company. For example, the return on equity (ROE), return on assets (ROA) and total assets efficiency to measure the efficiency of an organization require information from both balance sheet and statement of profit and loss. Hence, the current chapter helps in understanding the techniques of financial statement analysis such as vertical analysis, horizontal analysis and ratio analysis using both balance sheet and income statement of Veva Company Limited given in Tables 3.1a and 3.1b, respectively.

ROE is widely used as the most important indicator of performance from owner's perspective and ROA is understood as the most important indicator of performance from divisional manager's perspective. Hence, it is important to understand the drivers of ROE and ROA in the past and identify possible drivers of ROE and ROA in future. The last section of this chapter deals with the drivers of performance.



RELATION BETWEEN BALANCE SHEET AND STATEMENT OF PROFIT AND LOSS

The total assets of a company are always equal to total liabilities and equity in balance sheet according to double-entry principle of accounting which will be discussed in detail in Chapter 4. According to this principle, the balance sheet of any company can be presented in the following equation form:

$$\text{Assets} = \text{Liabilities} + \text{Equity} \quad (3.1)$$

As equity consists of equity capital contributed by owners and other equity in balance sheet, it can be expanded as follows:

$$\text{Assets} = \text{Liabilities} + \text{Equity capital} + \text{Other equity} \quad (3.2)$$

Other equity is the cumulative retained earnings. For example, PAT and dividend of a company in the first year are ₹30 and ₹10, respectively. The other equity of the company in the first year would be ₹20, that is, net income minus dividend. PAT and dividend in the second year are ₹50 and ₹5, respectively. The other equity of the second year would be ₹45. However, the total other equity at the end of the second year would be ₹65 which is a cumulative of the first and second years' other equity. Therefore, the other equity can be rewritten as follows:

$$\begin{aligned} \text{Assets} = & \text{Liabilities} + \text{Equity capital} + \text{Beginning-} \\ & \text{of-the-year other equity} - \text{Current-year} \\ & \text{PAT} - \text{Dividend in current year} \end{aligned} \quad (3.3)$$

The current-year PAT is the difference between total revenue and total expenses. Hence, the current-year profit from the above equation can be rewritten as follows:

$$\begin{aligned} \text{Assets} = & \text{Liabilities} + \text{Equity capital} + \text{Beginning-of-} \\ & \text{the-year other equity} - \text{Revenue} - \text{Expenses} \\ & \text{Dividend in current year} \end{aligned} \quad (3.4)$$



Thus, the current-year PAT and income statement are part of balance sheet. This relation between statement of profit and loss and balance sheet indicates that the increase in profit of a company would increase the other equity which in turn increases the equity of the company. If a company reports losses, then this would reduce the other equity which in turn reduces the equity of the company. In summary, a company reporting profit continuously would keep increasing its equity and a company reporting losses continuously would lose its equity in few years. Microsoft Corporation is an example of making continuous profit and accumulating the other equity to increase its equity. Kingfisher Airlines is an example of reporting continuous losses and then losing its other equity and, thus, equity. As net worth and book value of the company are the other alternative terms of equity, it is extremely important to keep enhancing net worth or book value of the company.

CRACKING THE VERTICAL ANALYSIS

This is an old and simple technique used to analyse the balance sheet and statement of profit and loss. This is also known as common-size analysis of balance sheet and statement of profit and loss. Tables 3.2a and 3.2b show the common-size balance sheet of Veva Company Limited for three years.

VERTICAL ANALYSIS OF BALANCE SHEET

In the case of vertical analysis of balance sheet of a company, each line item of balance sheet is shown as a percentage of total assets. For example, cash in hand, inventory, PPE, capital, other equity, accounts payables, etc., are shown as a percentage of total assets. The users of financial statements



Table 3.1a: Balance Sheet of Veva Company Limited for the Years
Ending 31 March 2019, 2018 and 2017 (₹ in Million)

	March 2019	March 2018	March 2017
Assets			
1. Current assets			
a. Inventories	236	300	325
b. Financial assets			
i. Trade receivables	297	390	350
ii. Cash and cash equivalents	26	40	60
iii. Bank balance (other than above)	16	20	23
iv. Loans (given by the company)	7	5	2
v. Other financial assets	19	15	11
c. Deferred tax asset	31	12	9
d. Other current assets	4	13	11
	636	795	791
2. Non-current assets			
a. Property, plant and equipment	489	253	101
b. Capital work in progress	123	67	14
c. Investment property	63	35	13
d. Intangible assets	25	18	1
e. Intangible assets under development	4	2	1
f. Financial assets			
i. Investments	31	25	11
ii. Loans	41	22	21
iii. Other financial assets	12	5	1

(continued)



(continued)

	March 2019	March 2018	March 2017
g. Deferred tax assets (net)	49	22	1
h. Other non-current assets	8	5	2
	845	454	166
Total assets (1 + 2)	1,481	1,249	957
Equity and liabilities			
3. Equity			
a. Equity share capital	239	200	162
b. Other equity	277	200	163
	516	400	325
Liabilities			
4. Non-current liabilities			
a. Deferred revenue	123	110	90
b. Financial liabilities			
i. Borrowings	70	60	40
ii. Trade payables	45	40	25
iii. Other financial liabilities	14	9	5
c. Provisions	36	30	20
d. Other non-current liabilities	12	10	7
	300	259	187
5. Current liabilities			
a. Deferred revenue	110	90	50
b. Financial liabilities			
i. Trade payables	378	350	301
ii. Other financial liabilities	49	50	30
c. Other current liabilities	68	60	41
d. Provisions	25	20	15
e. Current tax liability (net)	35	20	8
	665	590	445
Total equity and liabilities (3 + 4 + 5)	1,481	1,249	957



Table 3.1b: Income Statement of Veva Company Limited for Year Ending March 2019, 2018 and 2017 (₹ in Millions)

S. No.	Particulars	March 2019	March 2018	March 2017
1.	Revenue from operations	3,000	2,000	1,500
2.	Other income	25	16	7
3.	Total income (1 + 2)	3,025	2,016	1,507
4.	Expenses			
	a. Cost of material consumed	992	700	609
	b. Cost of stores and spares consumed	215	189	162
	c. Consumption of stock in trade	27	19	16
	d. Changes in inventories of finished goods, work in progress and scrap	-6	-5	-7
	e. Employees' benefits expense	892	607	512
	f. Finance costs	20	18	12
	g. Depreciation and amortization expense	49	25	10
	h. Other expenses	681	405	164
	Total expenses (a-h)	2,870	1,958	1,478
5.	Profit before exceptional items and tax (3-4)	155	58	29
6.	Exceptional items	0	0	0
7.	PBT	155	58	29

(continued)



(continued)

S. No.	Particulars	March 2019	March 2018	March 2017
8.	Tax expenses			
	Current tax	43	12	10
	Earlier years	12	5	4
	Deferred tax	23	3	3
	Total provision for taxation	78	20	17
9.	Profit for the year (7–8)	77	38	12
10.	Other comprehensive income/loss	0	0	0
11.	Total comprehensive income for the year (9 + 10)	77	38	12
12.	Earnings per equity share (face value ₹1 each)			
	a. Basic EPS (in ₹)	0.3222	0.1900	0.0741
	b. Diluted EPS (in ₹)	0.3222	0.1900	0.0741

would understand the contribution of each asset and liability to total assets. In this case of Veva Company as presented in Table 3.2a, the current assets contributed 82.65 per cent of total assets in the year 2016–2017 and non-current assets contributed just 17.35 per cent of total assets. However, by the end of the financial year 2018–2019, the current assets declined to 42.94 per cent and non-current assets increased to 57.06 per cent of total assets. As the inventory and accounts receivables are part of current assets, the current assets declined due to decline in inventory from 33.96 per cent to 15.94 per cent and



Table 3.2a: Common-size Balance Sheet of Veva Company Limited for the Year Ending 31 March 2019, 2018 and 2017
(₹ in Million)

	March 2019	March 2018	March 2017
Assets	%	%	%
1. Current assets			
a. Inventories	15.94	24.02	33.96
b. Financial assets			
i. Trade receivables	20.05	31.22	36.57
ii. Cash and cash equivalents	1.76	3.20	6.27
iii. Bank balance (other than above)	1.08	1.60	2.40
iv. Loans	0.47	0.40	0.21
v. Other financial assets	1.28	1.20	1.15
c. Deferred tax asset	2.09	0.96	0.94
d. Other current assets	0.27	1.04	1.15
	42.94	63.65	82.65
2. Non-current assets			
a. Property, plant and equipment	33.02	20.26	10.55
b. Capital work in progress	8.31	5.36	1.46
c. Investment property	4.25	2.80	1.36
d. Intangible assets	1.69	1.44	0.10
e. Intangible assets under development	0.27	0.16	0.10
f. Financial assets			
i. Investments	2.09	2.00	1.15

(continued)



(continued)

	March 2019	March 2018	March 2017
ii. Loans	2.77	1.76	2.19
iii. Other financial assets	0.81	0.40	0.10
g. Deferred tax assets (net)	3.31	1.76	0.10
h. Other non-current assets	0.54	0.40	0.21
	57.06	36.35	17.35
Total assets (1 + 2)	100.00	100.00	100.00
Equity and liabilities			
3. Equity			
a. Equity share capital	16.14	16.01	16.93
b. Other equity	18.70	16.01	17.03
	34.84	32.03	33.96
Liabilities			
4. Non-current liabilities			
a. Deferred revenue	8.31	8.81	9.40
b. Financial liabilities			
i. Borrowings	4.73	4.80	4.18
ii. Trade payables	3.04	3.20	2.61
iii. Other financial liabilities	0.95	0.72	0.52
c. Provisions	2.43	2.40	2.09
d. Other non-current liabilities	0.81	0.80	0.73
	20.26	20.74	19.54
5. Current liabilities			
a. Deferred revenue	7.43	7.21	5.22
b. Financial liabilities			
i. Trade payables	25.52	28.02	31.45
ii. Other financial liabilities	3.31	4.00	3.13
c. Other current liabilities	4.59	4.80	4.28



	March 2019	March 2018	March 2017
d. Provisions	1.69	1.60	1.57
e. Current tax liability (net)	2.36	1.60	0.84
	44.90	47.24	46.50
Total equity and liabilities (3 + 4 + 5)	100.00	100.00	100.00

decline in accounts receivables from 36.57 per cent to 20.05 per cent. The increase in non-current assets is in the form of increase in PPE and capital work in progress. PPE increased from 10.55 per cent to 33.02 per cent of total assets in the three-year period.

In Veva, the significant drop in current assets and increase in long-term assets imply that this company has released the financial resources from short-term assets such as inventory and receivables and invested these funds in PPE. The reasons for reduction in inventory and accounts receivables and substantial investment in long-term assets like PPE could be better analysed and understood when such developments are connected to the changes in the business models and strategy of Veva Company. The users should seek the justification from the inventory managers for reduction of the inventory and from receivables managers for reduction in accounts receivables. Generally, improving the business by minimizing the investment in inventory and accounts receivables is a positive indicator. However, one should analyse the negative effects of reduction in inventory and accounts receivables, if any. Similarly, the users of financial statement should hunt for the explanation from production and plant managers for such big increase in PPE in non-current assets in the balance sheet.



VERTICAL ANALYSIS OF INCOME STATEMENT

In case of vertical analysis which is also known as common-size analysis of statement of profit and loss, each item of income statement is shown as a percentage of total revenue from operations. For example, other income, material expense, manpower expense, tax expense, PBT, PAT, etc., are shown as a percentage of revenue from operations. For the year ending 31 March 2019 in the case of Veva Company as presented in Table 3.2b, the material expense was 33.07 per cent, labour expense was 29.73 per cent, other expense was 22.70 per cent and PAT was 2.57 per cent of total revenue from operations. When these figures are compared with the figures for the year ending 31 March 2017, there is a big reduction in material expense from 40.60 per cent to 33.07 per cent of total revenue from operations and a big reduction in labour expense from 34.13 per cent to 29.73 per cent of total revenue from operations. These two changes observed from common-size statement of profit and loss are positive indicators for the company. However, there is a significant increase in other expenses from 10.93 per cent to 22.70 per cent of total revenue from operations during the year ending 31 March 2019. This doubling of other expenses is a worrying factor for the company. Positive changes related to material and labour expense and unfavourable change in other expenses resulted in improvement of bottom line (i.e., PAT) from 0.80 per cent to 2.57 per cent of total revenue from operations of the company during the year ending March 2019. The drivers of improvement in efficiency of material and labour consumption would be better understood with the help of explanations from the managers related to consumption of material and labour.

Such vertical analysis of balance sheet and statement of profit and loss should be carried out in each major business segments or strategic business units' financial statements of a company in addition to corporate-level analysis of balance sheet.



Table 3.2b: Common-size Income Statement of Veva Company Limited for Year Ending March 2019, 2018 and 2017 (in %)

S. No.	Particulars	March 2019	March 2018	March 2017
1.	Revenue from operations	100.00	100.00	100.00
2.	Other Income	0.83	0.80	0.47
3.	Total income (1 + 2)	100.83	100.80	100.47
4.	Expenses	0.00	0.00	0.00
	a. Cost of material consumed	33.07	35.00	40.60
	b. Cost of stores and spares consumed	7.17	9.45	10.80
	c. Consumption of stock in trade	0.90	0.95	1.07
	d. Changes in inventories of finished goods, work in progress and scrap	-0.20	-0.25	-0.47
	e. Employees' benefits expense	29.73	30.35	34.13
	f. Finance costs	0.67	0.90	0.80
	g. Depreciation and amortization expense	1.63	1.25	0.67
	h. Other expenses	22.70	20.25	10.93
	Total expenses (a-h)	95.67	97.90	98.53
5.	Profit before exceptional items and tax (3-4)	5.17	2.90	1.93
6.	Exceptional items	0.00	0.00	0.00
7.	PBT	5.17	2.90	1.93
8.	Tax expenses			
	Current tax	1.43	0.60	0.67

(continued)



(continued)

S. No.	Particulars	March 2019	March 2018	March 2017
	Earlier years	0.40	0.25	0.27
	Deferred tax	0.77	0.15	0.20
	Total provision for taxation	2.60	1.00	1.13
9.	Profit for the year (7–8)	2.57	1.90	0.80

Such analysis enables in understanding the favourable and unfavourable deviations in each segment. This enables the managers in rewarding in the case of favourable deviations and taking corrective measures in unfavourable deviations. Such managerial corrective and rewarding activities based on accounting information enable better managerial decision-making and improve business performance in the future.

CRACKING THE HORIZONTAL ANALYSIS

Horizontal analysis helps in comparing current-year balance sheet and statement of profit and loss with the previous year or base year or index year's balance sheet and statement of profit and loss. Hence, this analysis is also known as comparative analysis or index analysis of financial statements. Each line item of balance sheet and statement of profit and loss is presented as a percentage of their respective items in the base or previous year. The horizontal analysis of balance sheet and statement of profit and loss is presented in Tables 3.3a and 3.3b, respectively.

HORIZONTAL ANALYSIS OF BALANCE SHEET

The comparative analysis or horizontal analysis of balance sheet of Veva Company for the year ending 31 March 2019,



2018 and 2017 is presented in Table 3.3a. The financial year ending 31 March 2017 is the base or index year. The balance sheet items of the year ending March 2019 and 2018 are presented as a percentage of balance sheet items of 2017. The analysis of these percentages indicates that there is big jump in non-current assets from 2017 to 2019. Non-current assets like deferred tax assets are 4,900 per cent, intangible assets are 2,500 per cent, other financial assets are 1,200 per cent, capital work in progress is 878.57 per cent and PPE is 484.16 per cent as on 31 March 2019 as compared to their respective line items during base or index year ending March 2017. Certain current assets declined during the year ending March 2019 and March 2018. Inventory is 72.62 per cent, trade receivables are 84.86 per cent and cash and cash equivalents are 43.33 per cent as on 31 March 2019 as compared to their line items of balance sheet of base year as on 31 March 2017.

All the liabilities and equity line items of balance sheet increased as on 31 March 2019 as compared to their respective line items of balance sheet of the index or base year. However, the increase in current tax liability and deferred revenue is highest and it is lowest in the case of trade payables. Thus, the horizontal or comparative balance sheet helps in understanding the growth of each line item as compared to their respective base or index year items of balance sheet. The managers should analyse and understand whether the growth in each line item of the balance sheet is positive or negative. For example, if there is a substantial growth in capital work in progress, which is 878.58 per cent of the base year, it needs to be analysed and reasons for such abnormal growth need to be identified. If such growth is not in favour of business performance, the managers should take corrective measures to reduce it. The reasons for growth or decline in each of the line items of balance sheet would be better understood with explanations from managers related to those line items.



Table 3.3a: Comparative Balance Sheet of Veva Company Limited
for the Years Ending 31 March 2019, 2018 and 2017 (₹ in Million)

	March 2019	March 2018	March 2017
Assets			
1. Current assets			
a. Inventories	72.62	92.31	100.00
b. Financial assets			
i. Trade receivables	84.86	111.43	100.00
ii. Cash and cash equivalents	43.33	66.67	100.00
iii. Bank balance (other than above)	69.57	86.96	100.00
iv. Loans	350.00	250.00	100.00
v. Other financial assets	172.73	136.36	100.00
c. Deferred tax asset	344.44	133.33	100.00
d. Other current assets	36.36	118.18	100.00
	80.40	100.51	100.00
2. Non-current assets			
a. PPE	484.16	250.50	100.00
b. Capital work in progress	878.57	478.57	100.00
c. Investment property	484.62	269.23	100.00
d. Intangible assets	2,500.00	1,800.00	100.00
e. Intangible assets under development	400.00	200.00	100.00
f. Financial assets			
i. Investments	281.82	227.27	100.00
ii. Loans	195.24	104.76	100.00



	March 2019	March 2018	March 2017
iii. Other financial assets	1,200.00	500.00	100.00
g. Deferred tax assets (net)	4,900.00	2,200.00	100.00
h. Other non-current assets	400.00	250.00	100.00
	509.04	273.49	100.00
Total assets (1 + 2)	154.75	130.51	100.00
Equity and liabilities			
3. Equity			
a. Equity share capital	147.53	123.46	100.00
b. Other equity	169.94	122.70	100.00
	158.77	123.08	100.00
Liabilities			
4. Non-current liabilities			
a. Deferred revenue	136.67	122.22	100.00
b. Financial liabilities			
i. Borrowings	175.00	150.00	100.00
ii. Trade payables	180.00	160.00	100.00
iii. Other financial liabilities	280.00	180.00	100.00
c. Provisions	180.00	150.00	100.00
d. Other non-current liabilities	171.43	142.86	100.00
	160.43	138.50	100.00
5. Current liabilities			
a. Deferred revenue	220.00	180.00	100.00
b. Financial liabilities			
i. Trade payables	125.58	116.28	100.00

(continued)



(continued)

	March 2019	March 2018	March 2017
ii. Other financial liabilities	163.33	166.67	100.00
c. Other current liabilities	165.85	146.34	100.00
d. Provisions	166.67	133.33	100.00
e. Current tax liability (net)	437.50	250.00	100.00
	149.44	132.58	100.00
Total equity and liabilities (3 + 4 + 5)	154.75	130.51	100.00

HORIZONTAL ANALYSIS OF STATEMENT OF PROFIT AND LOSS

The comparative or horizontal analysis of statement of profit and loss of Veva Company for the year ending 31 March 2019, 2018 and 2107 is presented in Table 3.3b. The financial year ending 31 March 2017 is the base or index year. Each line item of statement of profit and loss for the year ending March 2019 and 2018 is presented as a percentage of statement of profit and loss items of 2017.

The top line (revenue from operations) of the statement of profit and loss is 200 per cent in the year ending March 2019 as compared to top line of the year ending March 2017. However, the bottom line (PAT) of statement of profit and loss is 641.67 per cent of its line item during the year ending March 2017. Such abnormal increase in profit needs to be analysed. The comparative analysis of statement of profit and loss shows that this growth in profit is achieved through abnormal reduction in material and labour expenses. The material and labour expenses were 162.89 per cent and



Table 3.3b: Comparative Income Statement of Veva Company Limited for Years Ending March 2019, 2018 and 2017 (in %)

S. No.	Particulars	March 2019	March 2018	March 2017
1.	Revenue from operations	200.00	133.33	100.00
2.	Other Income	357.14	228.57	100.00
3.	Total income (1 + 2)	200.73	133.78	100.00
4.	Expenses			
	a. Cost of material consumed	162.89	114.94	100.00
	b. Cost of stores and spares consumed	132.72	116.67	100.00
	c. Consumption of stock in trade	168.75	118.75	100.00
	d. Changes in inventories of finished goods, work in progress and scrap	85.71	71.43	100.00
	e. Employees' benefits expense	174.22	118.55	100.00
	f. Finance costs	166.67	150.00	100.00
	g. Depreciation and amortization expense	490.00	250.00	100.00
	h. Other expenses	415.24	246.95	100.00
	Total expenses (a-h)	194.18	132.48	100.00
5.	Profit before exceptional items and tax (3-4)	534.48	200.00	100.00
6.	Exceptional items	0.00	0.00	0.00
7.	PBT	534.48	200.00	100.00
8.	Tax expenses			
	Current tax	430.00	120.00	100.00

(continued)



(continued)

S. No.	Particulars	March 2019	March 2018	March 2017
	Earlier years	300.00	125.00	100.00
	Deferred tax	766.67	100.00	100.00
	Total provision for taxation	458.82	117.65	100.00
9.	Profit for the year (7–8)	641.67	316.67	100.00

174.22 per cent of their line items of in the year ending March 2017, respectively. However, there is a disproportionate increase in other expenses during the year ending March 2018 and 2019. In the year ending March 2019, other expense is 415.24 per cent of its line item in the year ending March 2017. The managers of this company should investigate and identify the reasons for such abnormal increase in other expenses. This expense could be controlled in the future for improving performance of the company. Thus, managers need to analyse the growth in each line items of the income statement and correlate the growth to the sales and profitability of the company.

Thus, the comparative analysis of balance sheet and statement of profit and loss helps in understanding the growth in each line item as compared to base or index year. When the comparative balance sheet and statement of profit and loss are analysed together, interesting observations can be found. For example, in the case of Veva Company, there is decrease in accounts receivables and inventory in balance sheet as compared to base year despite of doubling of sales during the year ending March 2019. Another major observation is that the sales were just 200 per cent of the sales of base year despite 484.16 per cent PPE as compared to base year. PPE is 484.16 per cent as on 31 March 2019. The reasons for these favourable and



unfavourable changes would be sought from the managers dealing with these line items. Such analysis of reasons for favourable and unfavourable deviations and managerial planning based on such deviations would enable the managers in improving the financial performance as well as financial health of the companies.

RATIO ANALYSIS OF BALANCE SHEET WITH INCOME STATEMENT

Ratio analysis is the third and most frequently used techniques of financial statements. Ratio is a mathematical relation between any two variables from balance sheet, income statement and cash flow statement. Based on purpose of financial statement analysis, these ratios could be classified into five categories as profitability ratios, efficiency ratios, liquidity ratio, solvency ratios and valuation ratios. Veva Company's balance sheet and income statement for three years are used for understanding ratio analysis (Table 3.4).

PROFITABILITY RATIOS

Profitability ratios help in analysing performance of a company during a particular period. Net income ratio, ROE and ROA are some of the most frequently used profitability analysis ratios.

Net income ratio: The net income ratio is 2.57 per cent in 2019, 1.90 per cent in 2018 and 0.80 per cent in 2017. The increase in net income ratio from 0.80 per cent to 2.57 per cent indicates improvement in the sales margin of the company. This is the ratio of PAT to sales revenue from operations. It shows margin on the sales revenue of a company. Generally, a higher net income ratio implies that it is better for the company. This ratio is directly relevant for sales and marketing



managers for product or sales emphasis. The managers should maximize the sales of the products with higher margins in the case of Veva Company. The net income ratios of multiple products or services or divisions of Veva Company help in understanding the driver of improvement in overall net income of the company. The managers should evaluate product-wise, segment-wise, branch-wise, service-wise and customer-wise profitability and rank the same. This enables the managers in deciding the product emphasis to maximize the sales as well as profit. This also helps in identifying the loss-making products or units to minimize the sales and losses of such units.

ROA: Veva Company's ROA is 5.20 per cent in 2019, 3.04 per cent in 2018 and 1.25 per cent in 2017. This is the ratio of PAT divided by total assets of a company or average assets (average of current-year and previous-year total assets). This ratio helps in understanding profit-generating power of the total resources of a company. This ratio is useful to the managers who are independently managing certain products or divisions or regions. Generally, higher ROA indicates that it is better for the company. These ROA ratios in three years of Veva Company imply improvement in performance of the company. These ratios would be better interpreted if they are compared with ROA based on budgets of the company or ROA of competitor or industry. The managers should evaluate the product-wise, segment-wise, branch-wise, service-wise, project-wise and customer-wise ROA and rank the same. This enables the managers in deciding better resource allocations to maximize the sales as well as profit. This also helps in identifying the business units of a company which are viable and taking measures to improve their performance.

ROE: ROE of Veva Company is 14.92 per cent in 2019, 9.50 per cent in 2018 and 3.69 per cent in 2017. There



is continuous improvement in ROE from 3.69 per cent to 14.92 per cent. This is the ratio of PAT to equity shareholders' funds or average shareholders' funds (average of current-year and previous-year shareholders' funds). Equity shareholders' funds is the sum of equity capital and other equity. This ratio is the most important indicator in the hands of equity shareholders. Generally, higher ROE indicates that company is making better return on shareholders' money. This ROE of Veva could be compared with budgeted ROE of the same company or ROE of competitor and industry for improved evaluation and interpretation.

Thus, profitability of a company would be analysed by sales executives using net income ratio, by divisional managers using ROA and by equity shareholders using ROE. Efficiency in utilization of resources is one of the main drivers of higher ROE. The next section deals with efficiency ratios.

EFFICIENCY RATIOS

In general, efficiency is the ratio of output to input. In case of financial statement analysis, efficiency ratio of a company is sales revenue from operations divided by total assets or average assets (average of current-year and previous-year assets). Sales revenue is the output and total assets is the input in efficiency analysis at corporate level. However, efficiency can be related to a particular resource also such as current assets efficiency and inventory efficiency. The efficiency ratios are also known as turnover ratios. In general, improvement in efficiency improves ROA and ROE, which is discussed in detail in the later part of this chapter. Total assets efficiency, non-current assets efficiency, current assets efficiency, inventory efficiency and accounts receivables efficiency are frequently used efficiency ratios, and they are presented as follows.



Total Assets Efficiency Ratio

The total assets efficiency ratio of Veva is 2.03 in 2019, 1.60 in 2018 and 1.57 in 2017. It is the ratio of sales revenue in a period from operations divided by total assets at the end of that period or average assets (average of current-year and previous-year assets). This ratio indicates the output for every unit of input. For example, sales revenue is ₹20, total assets are ₹5 and total assets efficiency is four, indicating that the output is four times of input. In other words, for every one unit of input, the output is ₹4. The higher efficiency ratios indicate higher efficiency of companies resulting in improvement of ROA and ROE. The total asset efficiency ratio of Veva indicates that there is continuous improvement in the asset efficiency of this company from 2017 to 2019.

These total asset efficiency ratios are subdivided into non-current assets efficiency ratio and current assets efficiency ratio.

Non-current assets efficiency ratio: In the case of Veva Company, the non-current efficiency ratio is 3.55 in 2019, 4.41 in 2018 and 9.04 in 2017. It is the ratio of sales revenue in a period from operations divided by non-current assets at the end of that period or average non-current assets (average of current-year and previous-year non-current assets). The interpretation of this ratio is similar to the previous total asset efficiency ratio. The non-current asset efficiency ratio of Veva Company implies that there is continuous decline in the efficiency of utilization of non-current assets.

Current assets efficiency ratio: Veva Company's current assets efficiency ratio is 4.72 in 2019, 2.52 in 2018 and 1.90 in 2017 indicating continuous improvement in output and input ratio of current assets. It is the ratio of sales revenue in a period from operations divided by current assets at the end



of the period or average current assets (average of current-year and previous-year current assets).

Thus, the total assets efficiency could be subdivided into non-current assets efficiency ratio and current assets efficiency ratio. Such sub-classification of efficiency ratios of Veva Company implies that the improvement in total assets efficiency is due to improvement in efficiency of current assets. Now, the subsets of current assets efficiency are inventory efficiency, accounts receivables efficiency, inventory-holding days, receivables collection days and cash conversion cycle (CCC) which are given below.

Inventory efficiency ratio: The inventory efficiency of Veva Company is 12.71 in 2019, 6.67 in 2018 and 4.62 in 2017. It is the ratio of sales revenue from operations during a period divided by inventory at the end of the year or average inventory (average of current-year and previous-year inventory). This indicator shows the efficiency of a company in generating revenue for every unit of inventory. These figures of Veva Company imply that this company has maximized sales revenue from ₹4.62 to ₹12.71 for every ₹1 inventory. This is a significant improvement in management of inventory either by reducing inventory while keeping sales constant or maximizing sales revenue while keeping inventory constant or maximizing sales and minimizing inventory.

Receivables efficiency ratio: The accounts receivables efficiency of Veva Company is 10.10 in 2019, 5.13 in 2018 and 4.29 in 2017. It is the ratio of sales revenue from operations during a period divided by accounts receivables at the end of the year or average inventory (average of current-year and previous-year inventory). This indicator shows the efficiency of a company in generating revenue for every unit of investment



in receivables. These figures of Veva Company imply that this company has maximized sales revenue from ₹4.29 to ₹10.10 for every ₹1 investment in accounts receivables. This is a major improvement in management of accounts receivables either by reducing accounts receivables while keeping sales constant or maximizing sales revenue while keeping accounts receivables constant or maximizing sales and minimizing accounts receivables.

Inventory-holding days: Assuming 360 as number of days in the year, inventory-holding days of Veva Company are 28.32 in 2019, 54 in 2018 and 78 in 2017. The number of days required to convert inventory which is in the form raw material, work in progress and finished goods into sales is known as inventory-holding days. Generally, shorter inventory-holding days imply higher efficiency of inventory management. This is computed as number of days in a year divided by inventory efficiency. These figures indicate that this company is continuously cutting the number of days it is holding inventory to improve its efficiency.

Receivables collection days: Assuming 360 days as number of days in the year, receivables collection days of Veva Company are 35.64 in 2019, 70.20 in 2018 and 84 in 2017. The number of days required to collect accounts receivables (i.e., credit sales) from customers or clients is known as accounts receivables collection days. Generally, shorter receivables collection days imply higher efficiency of receivables management. This is computed as number of days in a year divided by accounts receivables efficiency. These figures of Veva Company indicate that this company has reduced collection days from 84 in 2017 to just 35.64 during 2019 showing improvement in management of receivables.



Cash Conversion Cycle: CCC is the number of days required to convert a company's investments in short-term resources into cash. In other words, number of days inventory held plus number of days required to collect accounts receivables minus number of days lag in payment of accounts payables is the cash conversion cycle. This indicator includes numbers of days taken to pay accounts receivables in addition to inventory-holding days and receivables collection days. It can be presented in the following form of equation:

$$\text{CCC} = \text{Inventory-holding days} + \text{Receivables collection days} - \text{Payables payment days} \quad (3.5)$$

Generally, shorter CCC implies higher operating efficiency and higher liquidity. In the case of Veva Company, the inventory-holding days and receivables collection days are already available as presented in previous two sections. Payables payment days need to be computed. This is computed as number of days in a year divided by payables efficiency. Payables efficiency is amount of material consumed divided by accounts payables or average payables (average of current-year and previous-year accounts payables). In the case of Vevo Company, the accounts payables efficiency is 27.29 in 2019, 22.58 in 2018 and 31.20 in 2017. Assuming the number of days in a year as 360, accounts payables payment days are 13.19 in 2019, 15.95 in 2018 and 11.54 in 2017, showing marginal increase in the number of outstanding days during the last three years. Generally, higher payables payment days show better efficiency. In the case of Veva Company, there is marginal increase in efficiency of management of payables.

When we integrate inventory-holding days, accounts receivables collection days and payables payment days, it would be CCC. Therefore, CCC in the case of Veva Company is as follows.



CCC in 2019 is the sum of inventory-holding days and receivables collection days minus accounts payables payment days.

$$\text{CCC in 2019: } 28.32 \text{ days} + 35.64 \text{ days} - 13.19 \text{ days} = 50.77 \text{ days} \quad (3.6)$$

$$\text{CCC in 2018: } 54.00 \text{ days} + 70.20 \text{ days} - 15.95 \text{ days} = 108.25 \text{ days} \quad (3.7)$$

$$\text{CCC in 2017: } 78.00 \text{ days} + 84.00 \text{ days} - 11.54 \text{ days} = 150.46 \text{ days} \quad (3.8)$$

These figures of Veva Company indicate that the company took 150.46 days to convert its working capital investments into cash. Later in the year 2019, it has reduced it to 50.77 days showing drastic improvement in operating efficiency.

Thus, total assets efficiency ratio would be used to understand corporate-level efficiency in utilization of assets. This would be further divided into non-current assets efficiency and current assets efficiency to understand efficiency of non-current assets and working capital in utilization of their resources, respectively. The current assets efficiency is further divided into inventory efficiency, accounts receivables efficiency and CCC efficiency to understand efficiency in management of inventory and accounts receivables.

The managers should evaluate the product-wise, segment-wise, branch-wise, service-wise, project-wise and customer-wise efficiency ratios. This enables the managers in understanding the efficiency of different products or segments. The managers may reward the units where the efficiency is higher and take corrective measures in case of the products where the efficiency ratio is low. Such analysis and activities enable the company in maximizing its efficiency at corporate level and in turn maximizing ROA and ROE.

LIQUIDITY RATIOS

Liquidity ratios aim to analyse a company's ability to pay short-term liabilities in next one-year period. In other words, these ratios evaluate availability of short-term assets to honour short-term liabilities. Current assets are short-term assets and current liabilities are short-term liabilities. Current ratio and quick ratio are most frequently used liquidity ratios which are discussed briefly as follows.

Current ratio: The current ratio of Veva Company is 0.96 in 2019, 1.35 in 2018 and 1.78 in 2017. This current ratio is the ratio of current assets to current liabilities. This indicates availability of short-term resources for every one unit of current liabilities. If current ratio of a company is 1.80, it means that this company has ₹1.80 for every ₹1 current liability. In other words, current assets are 1.80 times of current liability. Normally, 2:1 or higher current ratio of a company is treated as benchmark and as safe liquidity of that company. However, the real benchmark depends on the nature of product, market and strategy. In all three years, current ratio of Veva Company is less than 2 showing weak short-term liquidity condition during these three years.

Quick ratio: The quick ratio of Veva Company is 0.90 in 2019, 1.31 in 2018 and 1.73 in 2017. The quick ratio is also used to evaluate a company's ability to pay short-term liabilities. It is the ratio of quick assets divided by current liabilities. The quick assets are those current assets which would be converted into cash quickly. All current assets excluding inventory and prepaid expenses are quick assets. Inventory and prepaid expenses are excluded from quick assets as they take time and efforts to convert into sales. This ratio is treated as conservative as compared to current ratio. A quick ratio of 1:1 is treated as rule of thumb. A quick ratio of 1:1 or higher is treated



as safe liquidity condition of companies. In the case of Veva Company, short-term deferred tax asset and other current assets are deducted from current assets to compute quick assets. The quick ratio of Veva Company is 0.90 in 2019, 1.31 in 2018 and 1.73 in 2017. The quick ratio of this company in 2019 implies that quick assets are 0.90 times of current liabilities. It is lower than 1:1 in 2019 indicating unhealthy liquidity condition of Veva Company.

SOLVENCY RATIOS

Liquidity ratios presented in previous section help in evaluating short-term financial health of a company and solvency ratios help in understanding long-term financial health of a company. The solvency ratios indicate ability of a company to pay all liabilities in long-term. Debt-to-equity ratio, leverage ratio and interest-coverage ratio are some of the frequently used solvency ratios which are presented as follows.

Leverage ratio: In the case of Veva Company, it is 2.87 in 2019, 3.12 in 2018 and 2.94 in 2017. Leverage ratio is the ratio of total assets to shareholders' funds. Total assets include current assets plus non-current assets and shareholders' funds include equity share capital and other equity. If leverage ratio of a company is 1:1, it means total assets are equal to shareholders' funds. In other words, total assets are one time of shareholders' funds. If leverage ratio is 2, it means total assets are two times of shareholders' funds. When leverage ratio is higher than 1, it implies dependency on liabilities. Higher leverage ratio indicates higher dependency on liabilities and lower leverage ratio indicates lower dependency on liabilities. The leverage ratio of 2.94 of Veva Company indicates total assets of ₹2.94 for every ₹1 of shareholders' funds. In other words, the total assets are 2.94 times of shareholders' or owners' funds. This ratio of the company was constant over three-year period.



Debt-to-equity ratio: Veva Company's debt-to-equity is 187.02 per cent, 212.25 per cent and 194.46 per cent of shareholders' funds during 2019, 2018 and 2017, respectively. It is an alternative indicator to leverage ratio to understand the long-term financial health of a company. It is the ratio of total liabilities to shareholders' funds. The total liabilities include current and non-current liabilities and shareholders' funds include equity capital and other equity. It is another indicator to evaluate the extent of companies' dependency on liabilities as compared to owners' funds. If debt-to-equity ratio is higher, it implies higher dependency on liabilities and if debt-to-equity is lower, it implies lower dependency on liabilities.

Interest coverage ratio: The interest coverage ratio of Veva Company is 8.75 times, 4.22 times and 3.42 times of interest expense during 2019, 2018 and 2017, respectively. It is the ratio of PBIT to interest expense or finance cost. This ratio evaluates availability of profit for payment of interest expense on borrowings. If interest coverage ratio is 5, it means that the profit available for payment of interest is five times of interest expense. It is needless to mention that higher interest coverage is safer for lending institutions or individuals. These coverage ratios of Veva company indicate that there is increase in coverage of interest expense from 3.42 times during 2017 to 8.75 times during 2019 indicating improvement in the safety of lenders' money in this company.

VALUATION RATIOS

The valuation ratios help in understanding the valuation of a company in relation to accounting indicators of that company. All these ratios are based on market value per share of companies. The P/E ratio, P/B ratio, dividend yield ratio and P/S are frequently used valuation ratios in the capital market. The market prices of Veva Company are ₹6, ₹3 and ₹1 for the



years ending 31 March 2019, 2018 and 2017, respectively. These ratios are presented briefly as follows.

P/E ratio: P/E ratio of Veva is 18.62 times, 15.79 times, 13.50 times for the year ending 31 March 2019, 2018 and 2017, respectively. The P/E multiple is defined as market price for every ₹1 of earnings of a company. Market price per share divided by EPS is the P/E ratio. The market price of Veva Company is ₹6, ₹3 and ₹1 for the year ending 31 March 2019, 2018 and 2017, respectively. These P/E ratios of the company show that there is increase in the ratio from 13.50 times to 18.62 times. The shareholders' willingness to pay for every ₹1 of earning of this company increased from INR 13.50 to 18.62. Generally, higher P/E ratio means possible overvaluation of the stock and lower P/E ratio means possible undervaluation of the stock of the company. This P/E multiple of a company can be compared to P/E multiple of competitor(s) and/or industry to understand the undervaluation or overvaluation of the earnings of a company.

P/B ratio: In the case of Veva Company, P/B ratio is 2.78 times, 1.50 times and 0.50 times of book value of Veva Company during the year ending 31 March 2019, 2018 and 2017, respectively. The P/B multiple is defined as market price for every ₹1 of book value of a company. Market price per share divided by book value per share is the P/B ratio. The market price of Veva Company is ₹6, ₹3 and ₹1 for the year ending 31 March 2019, 2018 and 2017, respectively. The market value of the company was just 0.50 times of book value of the company during the year ending March 2017. However, the market value of the company increased to 2.78 times of book value of the company during the year ending March 2019. Like P/E ratio, higher P/B ratio means possible overvaluation of the company and lower P/B ratio means possible undervaluation of the company. Such P/B ratio of a company could be compared to



P/B ratio of competitor(s) and/or industry to understand the undervaluation or overvaluation of the company.

P/S ratio: Veva Company's P/S ratio is 0.48 times of sales in 2019, 0.30 times of sales in 2018 and 0.11 times of sales in 2017. When earnings of a company or industry are in negative (i.e., losses), it is not possible to use P/E multiples for analysis. In such case, one can use P/S ratio to understand the market valuation of the company. When online retail companies are into losses or insurance companies are into losses, P/S ratio would be used for analysis. If market price per share of a company is ₹22 and sales are ₹66, the P/S multiple would be 0.33 times. It means that market is willing to pay ₹0.33 for every ₹1 of sales of the company. These numbers imply that during the year ending March 2017, the market value of Veva was ₹0.30 for every ₹1 sale. This ratio increased to ₹0.40 of market value for every sales revenue of ₹1.

Dividend yield ratio: Dividend yield ratio is the ratio of dividend per share (DPS) to market price per share. If a company's DPS is ₹2 and market price per share is ₹20, the dividend yield ratio would be 10 per cent. Generally, higher dividend yield ratio is an indication of possible undervaluation of company and lower dividend yield ratio is an indication of possible overvaluation of the company. In the case of Veva company, this ratio is nil in all three years as dividend payment is zero.

DRIVERS OF PROFITABILITY

One of the aims of any company is maximizing competitive advantage and thereby maximizing the profitability. ROE is an overall indicator of profitability of a company from equity shareholders' perspective. Understanding the ratios and their relationship with ROE of a company is essential to maximize



Table 3.4: Ratios of Veva Company

	March 2019	March 2018	March 2017
Profitability Analysis			
ROE %	14.92	9.50	3.69
ROA %	5.20	3.04	1.25
Net income ratio %	2.57	1.90	0.80
Efficiency Analysis			
Total assets efficiency (times)	2.03	1.60	1.57
Non-current assets efficiency (times)	3.55	4.41	9.04
Current assets efficiency (times)	4.72	2.52	1.90
Inventory efficiency (times)	12.71	6.67	4.62
Inventory-holding days	28.32	54.00	78.00
Receivables efficiency (times)	10.10	5.13	4.29
Receivables collection days	35.64	70.20	84.00
Payables payment days	13.19	15.95	11.54
CCC	50.77	108.25	150.46
Liquidity Analysis			
Current ratio	0.96	1.35	1.78
Quick ratio	0.90	1.31	1.73
Solvency Analysis			
Leverage ratio (times)	2.87	3.12	2.94
Debt-to-equity ratio (times)	1.87	2.12	1.94
Interest coverage ratio (times)	8.75	4.22	3.42
Valuation Analysis			
P/E ratio	18.62	15.79	13.50
P/E ratio	0.48	0.30	0.11
P/E ratio (market value [MV] to book value [BV])	2.78	1.50	0.50
Dividend yield ratio	0.00	0.00	0.00



ROE in long term. This section deals with understanding how some of the individual ratios are connected to ROE. Figure 3.1 and Table 3.5 present the link between ROE and various other ratios.

ROE is dependent on ROA and leverage of the company. The product of ROA and leverage is ROE as presented in the following equation:

$$\text{ROE} = \text{ROA} \times \text{Leverage} \quad (3.9)$$

The above equation could be elaborated as follows:

$$\frac{\text{PAT}}{\text{SHF}} = \frac{\text{PAT}}{\text{TA}} \times \frac{\text{TA}}{\text{SHF}} \quad (3.10)$$

where

PAT = Profit after tax

SHF = Shareholders' funds

TA = Total assets

ROE could be maximized either by maximizing ROA or by maximizing leverage or by maximizing both ROA and leverage. In the case of Veva Company, as presented in Table 3.4, ROE increased from 3.69 per cent during 2017 to 14.92 per cent during the year ending March 2019. This threefold increase in ROE could be due to ROA and leverage of this company. The leverage ratio of this company was almost constant over the three-year period. However, ROA of this company increased from 1.25 per cent during 2017 to 5.20 per cent during 2019. Thus, the driver of increase in ROE is increase in ROA for three-year period of Veva Company.

As higher ROA leads to higher ROE, it is essential to understand the drivers of ROA to maximize it. The drivers of ROA would be total assets efficiency ratio and net income ratio as presented below.

$$\text{ROA} = \text{Net income ratio} \times \text{Total assets efficiency} \quad (3.11)$$



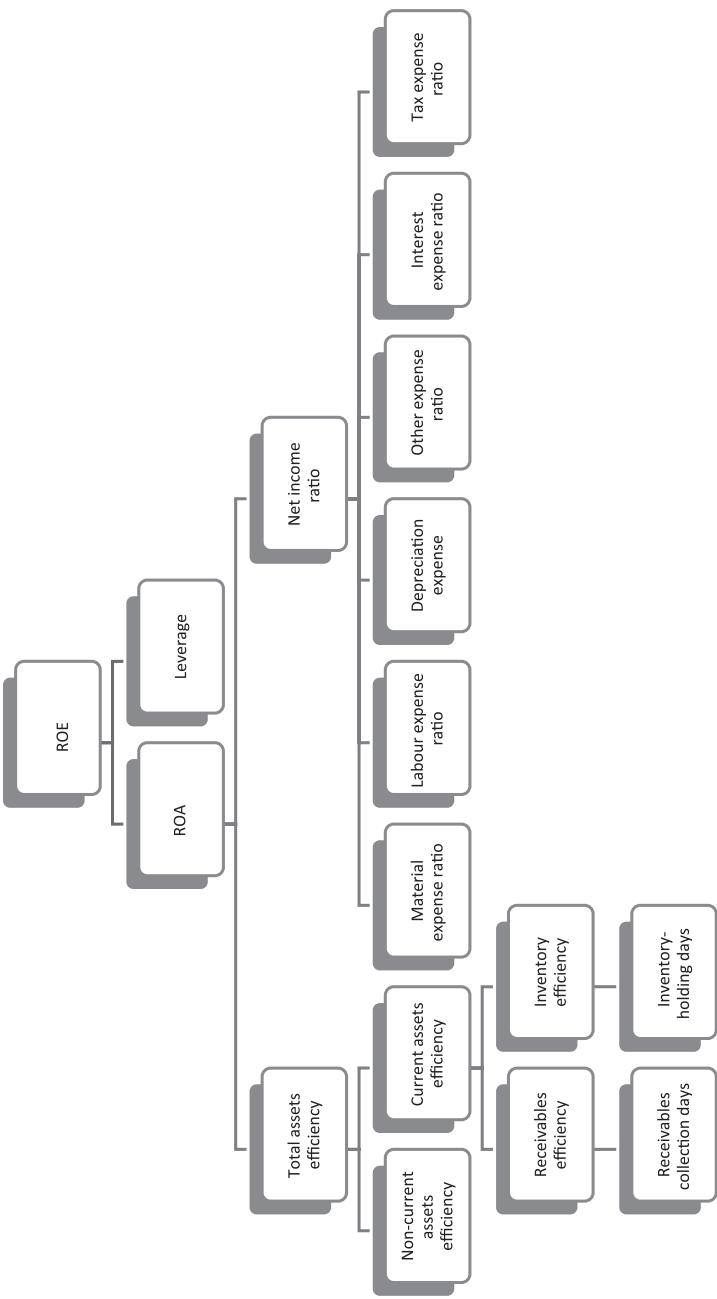


Figure 3.1: Drivers of ROE

The above equation could be elaborated as follows:

$$\frac{\text{Profit after tax}}{\text{Total assets}} = \frac{\text{Profit after tax}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} \quad (3.12)$$

In the case of Veva Company, ROA has increased from 1.25 per cent during 2017 to 5.20 per cent during 2019. In such period, total assets efficiency increased from 1.57 times during 2017 to 2.03 times during 2019 and net income ratio also increased from 0.80 per cent during 2017 to 2.57 per cent during 2019. These numbers indicate that the increase in ROA is due to improvement in total assets efficiency and net income ratio. In the next two paragraphs, the drivers of net income ratio and total assets efficiency are discussed.

First, it is vital to understand the drivers of improvement in net income ratio. The improvement in net income ratio would be due to material expense ratio, labour expense ratio, depreciation expense ratio, other expense ratio, interest expense ratio and tax expense ratio. The reduction in such expense ratios improves the net income ratio. In the case of Veva Company, the net income ratio increased from 0.80 per cent during 2017 to 2.87 per cent during 2019. During such period, there is a substantial decrease in material expense ratio from 52 per cent to 40.93 per cent of sales revenue and labour expense ratio from 34.13 per cent to 29.73 per cent of sales revenue. During the same period, there is increase in tax expense ratio and other expense ratio from 1.13 per cent to 2.60 per cent and 10.93 per cent to 22.70 per cent of sales revenue, respectively. The finance or interest expense ratio was stable during this period. These expense ratios of Veva Company indicate that the increase in net income ratio is due to reduction in material and labour expense in spite of spike in other expenses.

Second, it is also important to understand the driver of improvement or decline in total assets efficiency. The improvement



in efficiency of total assets could be due to improvement in efficiency of non-current assets and current assets. In the case of Veva Company, the total assets' efficiency improved from 1.57 times during 2017 to 2.03 times during 2019. During the same period, the non-current assets' efficiency declined from 9.04 times during 2017 to 3.55 times during 2019 and current assets' efficiency improved from 1.90 times during 2017 to 4.72 times during 2019. Therefore, these figures clarify that the improvement in efficiency of total assets is due to improvement in efficiency of current assets in spite of decrease in efficiency of non-current assets. The management needs to maintain the current trend of improvement in current assets' efficiency and arrest the declining trend of non-current assets' efficiency.

Now, the drivers of current assets' efficiency are disaggregated to help in understanding the drivers of improvement or decline in current assets' efficiency. The improvement in efficiency of current assets could be due to improvement in efficiency of inventory and accounts receivables. In the case of Veva Company, the total efficiency of current assets improved from 1.90 times during 2017 to 4.72 times during 2019. During the same period, the inventory efficiency has improved from 4.62 times during 2017 to 12.71 times during 2019 and accounts receivables' efficiency has improved from 4.29 times during 2017 to 10.10 times during 2019. Thus, these figures imply that the improvement in efficiency of current assets is due to improvement in efficiency of inventory as well as accounts receivables. Inventory-holding days and accounts receivables collection days are also indicators of efficiency of inventory and accounts receivables, respectively. The inventory collection days decreased from 78 days during 2017 to 28.32 days during 2019 and accounts receivables' collection days also decreased from 84 days during 2017 to 35.64 days during 2019. These metrics of Veva Company also imply that there is an improvement



in efficiency of inventory and accounts receivables, thereby improving the efficiency of current assets.

The managers should try to enhance the efficiency of assets and control the cost of each product, segment, region and project to maximize efficiency of the company and maximize the corporate-level net income. Such efforts to maximize efficiency and net income in turn maximize ROA and ROE.

Table 3.5: Drivers of Profitability

	March 2019	March 2018	March 2017
ROE	14.92	9.50	3.69
Drivers of ROE			
ROA	5.20	3.04	1.25
Leverage	2.87	3.12	2.94
Drivers of ROA			
Efficiency of total assets (TA)	2.03	1.60	1.57
Net income margin	2.57	1.90	0.80
Drivers of net income			
Material expense	40.93	45.15	52.00
Labour expense	29.73	30.35	34.13
Depreciation and amortization	1.63	1.25	0.67
Other expenses	22.70	20.25	10.93
Finance expense	0.67	0.90	0.80
Tax expense	2.60	1.00	1.13
Drivers of efficiency of TA			
Efficiency of current assets	4.72	2.52	1.90

(continued)



(continued)

	March 2019	March 2018	March 2017
Efficiency of non-current assets	3.55	4.41	9.04
Drivers of efficiency of non-current assets			
PPE	6.13	7.91	14.85
Intangible assets	120.00	111.11	1,500.00
Drivers of efficiency of current assets			
Inventory	12.71	6.67	4.62
Accounts receivables (A/R)	10.10	5.13	4.29
Inventory-holding days	28.32	54.00	78.00
A/R collection days	35.64	70.20	84.00

IN CONCLUSION

Thus, horizontal analysis, vertical analysis and ratio analysis are the three techniques used in analysis of financial statements. Ratios are classified into five categories depending on the purpose of analysis such as profitability ratios, efficiency ratios, liquidity ratios, solvency ratios and valuation ratios. The positive and negative findings based on the analysis of financial statements using these techniques should be connected to day-to-day activities and analysed further for managerial rewards and corrective measures. All these techniques of financial statement analysis should be connected to ROE which is an overall indicator of performance of the company to reward equity shareholders stable and better returns.



QUIZ: FIND OUT THE ANSWERS¹ BASED ON CHAPTER 3

1. In vertical analysis of a balance sheet, each item is presented as a per cent of _____.
 - a. Sales
 - b. Total assets
 - c. Capital
2. In vertical analysis of an income statement, each item is presented as a per cent of _____.
 - a. Sales
 - b. Total assets
 - c. Capital
3. Which ratio is used to understand the short-term financial health of a company?
 - a. Debt-to-equity ratio
 - b. ROE
 - c. Current ratio
4. Which ratio is used to understand the long-term financial health of a company?
 - a. Debt-to-equity ratio
 - b. ROE
 - c. Current ratio
5. Which ratio is used to understand the profitability of a company from shareholders' perspective?
 - a. Debt-to-equity ratio
 - b. ROE
 - c. Current ratio

¹ Answers of quiz

1. b 2. a 3. c 4. a 5. b



* 4 *

DAY-TO-DAY TRANSACTIONS AND THEIR EFFECT ON FINANCIAL STATEMENTS

In Veva Company, the manager, Atul, heads the marketing department and every year, the department is allocated xyz funds. Can Atul understand how his department's economic activities impact the financial health of the entire company?

Understanding the double-entry system enables Atul to have thorough knowledge of the activities of Veva Company and their impact on its financial statements. The double-entry principle of accounting is an important principle for preparation of summary of economic transactions in the form of balance sheet and statement of profit and loss. Therefore, this chapter helps in understanding double-entry principle to analyse the effect of economic activities on financial statements. Through this, Atul will be able to grasp how his activities impact financial health and performance of a company and help in better planning and resource allocation. There is an accountant approach and users' approach to understand the effect of economic transaction on financial statements. The users' approach is being used in this chapter as it is easier and simple to understand from managers' perspective.



To understand the effect of activities on balance sheet and income statement, economic activities of Veva company are broadly classified into five categories as follows:

1. Financing activities
2. Investing activities
3. Operating activities
4. Accounting adjustments
5. Budgeted activities

DOUBLE-ENTRY PRINCIPLE

The double-entry principle of accounting is a critical accounting principle in the preparation of balance sheet and income statement. This principle has two implications in financial statements. One, it implies that every economic transaction has two entries or two effects with equal amount. Second, according to this principle, as a result of double entry of each transaction, total assets are equal to liabilities plus equity in balance sheet. Based on this principle, the balance sheet is presented in equation form as follows:

$$\text{Assets} = \text{Liabilities} + \text{Equity} \quad (4.1)$$

Atul has taken four different major transactions from his colleague from accounts and finance department of Veva company for the double entry of each transaction and tallying the total assets with liabilities plus equity in balance sheet.

1. Veva Company borrows from a bank ₹100.
2. Veva Company issues equity shares worth ₹200.
3. Veva Company purchases land on cash for ₹50.
4. Veva Company purchases a machine on credit for ₹25.



Atul was inquisitive to learn the double effect of each transaction on financial statements as follows:

1. The first transaction creates additional cash and bank balance of Veva company because of borrowings. Hence, the first entry would be to add such borrowed amount to cash and bank balance which is an asset of Veva Company. This transaction also creates liability for Veva company. Hence, the second entry would be to add liabilities of Veva Company. Thus, addition to cash and bank balance (asset) and addition to liabilities in the balance sheet are the two effects or two entries of the first transaction as per double-entry principle. Atul has learnt that borrowings result in increase in assets as well as liabilities.
2. The second transaction is about fundraising activity from public. This transaction also creates additional cash and bank balance of Veva Company because of issue of equity shares to public. Hence, the first entry would be an addition of such additional funds to cash and bank balance which is an asset of Veva Company. This transaction creates additional equity capital of the company. Hence, the second entry would be an addition to the equity capital of the company. Thus, addition to cash and bank balance (asset) and addition to equity capital (equity) in the balance sheet are the two effects of the second transaction. The increase in assets as well as equity are the two effects of issue of equity learnt by Atul.
3. The third transaction is about development of infrastructure by acquiring additional land for cash. This transaction involves payment of cash and, thus, reduction in cash and bank balance which is an asset of Veva Company. Hence, the first entry would reduce



cash and bank balance (asset) of the company. This transaction also creates additional asset in the form of land as a non-current asset. Hence, the second entry would add to land (assets) of the company. Thus, Atul has learnt that how cash and bank balance converted into land effects the financial statements as deduction from cash and bank (asset) and addition to land (assets) as the two effects of the third transaction.

4. The fourth transaction is about expansion occurring in Veva Company in the form of an additional machine. This transaction involves creation of an asset called machine which is an asset of Veva Company and a liability as this machine is acquired by the company on credit. Hence, the first entry would be an addition to machine (asset) and the second entry would be an addition to liabilities in the balance sheet of the company. Thus, these are the double effects of the fourth transaction.

Now, Atul understands the double-entry system of accounting and, thus, the double effect of each of the four transactions on financial statements. He prepared a summary of these four transactions, presented in Table 4.1, with the net balance of each item of the balance sheet. After recording two double entries for four transactions, total of assets is equal to liabilities plus equity based on net balances (i.e., ₹325 = ₹125 + ₹200).

Atul understood that the double-entry system of accounting suggests that every financial transaction would have two effects/entries resulting in value of total assets equal to sum of liabilities and equity in the balance sheet. In the following section, Atul attempts to understand the application of double-entry principle in case of five primary activities of his company, that is, financing, investing, operating, accounting adjustments and budgeted activities.



Table 4.1: Transactions' Effect on Financial Statements

S. No.	Transaction	Assets =	Liabilities +	Equity
1.	Veva Company borrows from a bank ₹100	+100	+100	
2.	Veva Company issues equity shares worth ₹200	+200		+200
3.	Veva Company purchases land on cash for ₹50	-50 +50		
4.	Veva Company purchases a machine on credit for ₹25	+25	25	
	Net balance	325	125	200

IMPACT OF FINANCING ACTIVITIES ON FINANCIAL STATEMENTS

Fundraising is the major activity of finance department in corporate office of Veva Company. Atul has learnt that raising the funds for short- and long-term purposes is critical for financing activities. Now, Atul would like to understand the impact of fundraising activities on financial statements. These activities impact assets and liabilities as fundraising transactions generating cash and bank balance which is an asset of his company and would add to liabilities or equity capital. Initial public offerings, rights issue of equity, private placement of equity, issue of bonds or debentures, borrowings from banks and other institutions are some of the examples of long- and short-term fundraising activities. Financial activities also include repayment of short- and long-term borrowings.



With the help of his colleagues in finance department, Atul has identified five typical financial transactions of Veva Company or any other company. The five transactions whose impact on financial health of the company Atul would like to understand are as follows:

1. Veva Company issues initial public offer of ₹500.
2. Veva Company issues bonds to public of ₹400.
3. Veva Company borrows ₹300 from a public sector bank in India.
4. Veva Company repays bonds worth ₹200 (ignore the interest for this section).
5. Veva Company repays bank loan of public sector bank of ₹50.

A brief description of the double effect of the above transaction to enable Atul to comprehend the same is presented as follows:

1. As presented in Table 4.2, the first transaction involves collection of cash and bank balance through issue of equity shares and creation of additional equity capital. Hence, the first entry would be an addition to cash and bank (asset) and the second entry would be an addition to equity capital (equity) in the balance sheet.
2. The second transaction involves collection of cash and bank balance through sale of bonds or debentures and creation of liability. Hence, the first entry would be an addition to cash and bank (asset) and the second entry would be an addition to liabilities in the balance sheet.
3. The third transaction also involves collection of cash and bank balance through borrowings from a public sector bank, and it also creates liability for the

company. Hence, the first entry would be an addition to cash and bank (asset) and the second entry would be an addition to liabilities in the balance sheet.

4. The fourth transaction is about repayment of some of the bonds. Therefore, it involves payment of cash and bank (asset) and reduction in liabilities. Hence, the first entry would be deduction from cash and bank (asset) and the second entry would be deduction in liabilities.
5. The fifth transaction is also about repayment of some of the loans borrowed from a public sector bank. Like previous transaction, it involves payment of cash and bank (asset) and reduction in liabilities. Hence, the first entry would be deduction from cash and bank (asset) and the second entry would be deduction in liabilities.

After understanding the simple double effect of the five financing transactions of Veva Company, Atul prepared a summary of double entry of each of these financial transactions which is given in Table 4.2. The bottom row shows the net balance of each of the column where total assets are equal to liabilities plus equity.

Table 4.2: Financing Transactions' Impact on Financial Statements

S. No.	Transaction	Assets =	Liabilities +	Equity
1.	Veva Company issues initial public offer of ₹500	+500		+500
2.	Veva Company issues bonds to public of ₹400	+400	+400	

(continued)



(continued)

S. No.	Transaction	Assets =	Liabilities +	Equity
3.	Veva Company borrows ₹300 from a public sector bank in India	+300	+300	
4.	Veva Company repays bonds worth ₹200 (ignore the interest for this section)	-200	-200	
5.	Veva Company repays bank loan of public sector bank of ₹50	-50	-50	
	Net balance	950	450	500

IMPACT OF INVESTING ACTIVITIES (CAPITAL EXPENDITURE) ON FINANCIAL STATEMENTS

After raising funds, Atul contacted the managers from different projects and managers from purchase department to learn about the utilization of the funds generated through financing activities. These funds need to be invested in long-term assets and operations. This section shows the double entry of investing activities for long-term purpose. Investment in long-term assets is also known as capital expenditure (capex). The assets which generate economic benefits for the company for more than one year are known as non-current assets. For example, investing in machine, furniture, land, building, patents, etc. Acquisition of these assets could be against cash



or credit. Atul notes the following five major transactions related to utilization of funds for investment activities.

1. Veva Company purchases land against cash for ₹100.
2. Veva Company purchases machine against cash for ₹80.
3. Veva Company acquires furniture on credit for ₹60.
4. Veva Company purchases building on credit for ₹40.
5. Veva Company purchases patent by issue of equity shares of the company worth ₹150.

A brief description of the double effect of the above investing transaction is presented below.

1. The first investing transaction relates to acquisition of land and payment through cash and bank. This results in addition to the land (asset) and reduction from cash and bank balance (assets). Both these entries are affecting the assets only. Therefore, the first entry of this transaction would be deduction from cash and bank (asset) and second entry would be an addition to land (asset).
2. The second investing activity relates to acquisition of machine and payment through cash and bank. This results in addition to the machine (asset) and reduction from cash and bank (assets). In this transaction also, both these entries are affecting the assets only. Therefore, the first entry of this transaction would be deduction from cash and bank (asset) and the second entry would be an addition to machine (asset).
3. The third investing activity relates to acquisition of furniture on credit where there is no payment of cash immediately. Hence, this transaction results in addition to the furniture (asset) and addition to liabilities as a



result of credit purchase. Thus, the first entry of this transaction would be an addition to furniture (asset) and the second entry of this transaction would be an addition to liabilities in the balance sheet.

4. The fourth investing activity relates to acquisition of building on credit where there is no payment of cash immediately. Hence, this transaction also results in addition to the building (asset) and addition to liabilities as a result of credit purchase. Thus, the first entry of this transaction would be an addition to building (asset) and the second entry of this transaction would be an addition to liabilities in the balance sheet.
5. The fifth investing activity is related to investment in patents through issue of equity shares of the company. This is neither cash transaction nor credit transaction. The company is acquiring patents and sacrificing equity shares of the company. This transaction results in addition to patents (asset) and addition to equity capital of the company as there is issue of new equity shares. Thus, the first entry of this transaction would be an addition to patents (asset) and the second entry would be an addition to equity capital (equity) in the balance sheet of the company.

Now, Atul understands that the investing activity of a company impacts the assets of the company. In most of the cases, the investing activities reduce the current assets and increase the non-current assets as it is observed in the case of Veva Company. The summary of double entry of each of these five investing transactions is given in Table 4.3 and bottom row shows the net balance of each of the columns where total assets are equal to liabilities plus equity.



Table 4.3: Investment Transactions' Effect on Financial Statements

S. No.	Transaction	Assets =	Liabilities +	Equity
1.	Veva Company purchases land against cash for ₹100	-100 +100		
2.	Veva Company purchases machine against cash for ₹80	-80 +80		
3.	Veva Company acquires furniture on credit for ₹60	+60	+60	
4.	Veva Company purchases building on credit for ₹40	+40	+40	
5.	Veva Company purchases patent by issue of equity shares of the company worth ₹150	+150		+150
	Net balance	250	100	150

IMPACT OF OPERATING ACTIVITIES ON FINANCIAL STATEMENTS

After raising funds and investing those funds in non-current assets, the next major activity of any organization is running operations. The operating activities are day-to-day core activities of a particular organization. Even in case of Veva Company, Atul knows that these operating transactions include activities related to designing a product or service, purchases, productions, marketing, sales, distribution, post-sale service, etc.



Unlike investing and financing activities, operating activities are related to either revenue or expenses or both. These revenue and expense transactions effect profitability of an organization. As presented in Chapter 3, profitability is also part of double-entry accounting equation, and it is derived from Equation 4.1 as follows:

$$\text{Assets} = \text{Liabilities} + \text{Equity} \quad (4.1)$$

As equity consists equity capital and other equity in the balance sheet, it can be expanded as follows:

$$\text{Assets} = \text{Liabilities} + \text{Equity capital} + \text{Other equity} \quad (4.2)$$

As other equity is cumulative figures of retained earnings (earnings after paying dividend) of multiple years, the other equity can be rewritten as follows:

$$\begin{aligned} \text{Assets} = & \text{Liabilities} + \text{Equity capital} + (\text{Beginning} \\ & \text{other equity} + \text{Current-year PAT} - \\ & \text{Dividend in current year}) \end{aligned} \quad (4.3)$$

The current-year PAT is the difference between total income and total expenses. Hence, the current-year profit from the above equation can be rewritten as follows:

$$\begin{aligned} \text{Assets} = & \text{Liabilities} + \text{Equity capital} + (\text{Beginning} \\ & \text{other equity} + \text{Revenue} - \text{Expenses} - \\ & \text{Dividend in current year}) \end{aligned} \quad (4.4)$$

Thus, as presented in Equation 4.4, the revenue and expense items also affect the balance sheet items. As Equation 4.4 indicates, revenue items would add to other equity and expense items reduce the other equity.

Atul with the help of his colleagues from departments such as production, sales and distribution identified the following



10 most frequent operating transactions of Veva Company to comprehend the double effect of these transactions on financial performance and health of his company.

1. Veva Company purchased inventory for cash ₹100.
2. Veva Company purchased inventory on credit for ₹150.
3. Veva Company paid ₹100 as salaries to employees.
4. Veva Company made cash sales of ₹200.
5. Veva Company made credit sales of ₹300.
6. Veva Company paid ₹25 for advertisement.
7. Veva Company collected ₹125 from customers for previous credit sales.
8. Veva Company paid ₹70 to suppliers for previous credit purchase.
9. Veva Company paid ₹10 for interest on borrowings from bank.
10. Veva Company paid ₹2 for taxes on profit.

The double entries along with their impact on financial statements of these 10 transactions are presented as follows:

1. The first operating transaction relates to purchase of inventory through payment of cash and bank. This results in addition to the inventory (asset) and reduction from cash and bank (assets). The first entry of this transaction would be an addition to inventory (asset) and the second entry would be subtraction from cash and bank (asset).
2. The second operating transaction relates to purchase of inventory on credit. There is no payment of cash. This transaction results in addition to inventory like previous transaction and addition to accounts payables (liabilities) as this purchase of inventory is on credit.



Hence, the first entry of this transaction would be addition to inventory (asset) and the second entry would be an addition to accounts payables (liabilities) in the balance sheet of the company.

3. The third operating transaction relates to salaries paid to employees. The salaries would affect current-year profit adversely and payment of salaries would result in reduction in cash and bank balance. Hence, the first entry of this transaction would be deduction from other equity (for expense) and the second entry of this transaction would be deduction from cash and bank balance (asset) for making payment.
4. The fourth operating transaction relates to generation of revenue and cash and bank balance. This transaction would add to current-year profitability and would increase the cash and bank balance. Thus, the first entry of this transaction would be an addition to cash and bank (asset) and the second entry would be an addition to other equity (for profit) in the balance sheet of the company.
5. The fifth operating transaction is about generation of revenue on credit. This transaction would increase the current-year profit and accounts receivables (asset). Hence, the first entry of this transaction would be an addition to accounts receivables (asset) and the second entry would be an addition to other equity (for profit) in the balance sheet of the company.
6. The sixth operating transaction relates to payment of cash for advertisements. The advertisement expense would affect current-year profit adversely and payment for advertisements would result in reduction in cash and bank balance. Hence, the first entry of this transaction would be deduction from other equity (for expense) and the second entry of this transaction



would be deduction from cash and bank balance (asset) for making payment.

7. The seventh operating transaction is about collection of cash from clients or customers for making credit sales in the past. This involves in generation of cash and bank balance and reduction in the accounts receivables. Hence, the first entry of this transaction would be an addition to cash and bank balance (asset) and the second entry would be the deduction from accounts receivables (asset).
8. The eighth operating transaction is about payment of cash to suppliers or vendors for previous credit purchase of goods and services from them. This involves payment of cash and reduction in accounts payables. Hence, the first entry of this transaction would be a deduction from accounts payables (liabilities) and the second entry would be the deduction from cash and bank balance (asset).
9. The ninth operating transaction deals with payment of cash for interest on borrowings. The interest expense would reduce current-year profit and payment for interest expense would result in reduction in cash and bank balance. Hence, the first entry of this transaction would be deduction from other equity (for expense) and the second entry of this transaction would be deduction from cash and bank balance (asset) for making payment.
10. The tenth operating transaction is about payment of cash for income taxes. The tax expense would reduce current-year profit and payment for income taxes would result in reduction in cash and bank balance. Hence, the first entry of this transaction would be deduction from other equity (for expense) and the second entry of this transaction would be deduction from cash and bank balance (asset) for making payment.



The summary of double entry of each of these 10 operating transactions is given in Table 4.4 and the bottom row shows the net balance of each of the columns where total assets are equal to liabilities plus equity.

Table 4.4: Operating Transactions' Effect on Financial Statements

S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
1.	Veva Company purchased inventory for cash ₹100.	+100 -100			
2.	Veva Company purchased inventory on credit for ₹150.	+150	+150		
3.	Veva Company paid ₹100 as salaries to employees.	-100			-100
4.	Veva Company made cash sales of ₹200.	+200			+200
5.	Veva Company made credit sales of ₹300.	+300			+300
6.	Veva Company paid ₹25 for advertisement.	-25			-25
7.	Veva Company collected ₹125 from customers for previous credit sales.	+125 -125			



S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
8.	Veva Company paid ₹70 to suppliers for previous credit purchase.	-70	-70		
9.	Veva Company paid ₹10 for interest on borrowings from bank.	-10			-10
10.	Veva Company paid ₹2 for taxes on profit.	-2			-2
	Net balance	443	80	0	363

ACCOUNTING ADJUSTMENTS

One of the difficult and frequently used terms by accounting and finance executives is accounting adjustments. Atul found it difficult to comprehend what is the meaning of accounting adjustments and how these adjustments impact the financial performance and health of Veva Company.

There are certain adjustments to financial statements at the end of the accounting period though there is no economic transaction for such adjustments. Some of the major adjustments include depreciation and amortization, creation of provision for fringe benefits of employees, warranties, write-offs and deferred revenue. With the help of colleagues from accounting and finance department of Veva Company, Atul collected the following four adjustments to comprehend their double entries and impact on financial statements.



1. Depreciation and amortization of ₹100.
2. Provision for employee's gratuity and warranties worth ₹200.
3. Prepaid insurance worth ₹2 and obsolete inventory worth ₹3 are written off in the current accounting period.
4. Veva Company converts deferred revenue worth ₹40 into revenue in current year as promises have been delivered.

Four adjustments of Veva Company and their impact on financial statements are presented as follows.

1. Depreciation and amortization: At the end of the accounting period, a portion of non-current assets such as PPE and patents needs to be recognized as expense. A portion of tangible non-current assets converted into expense is called depreciation and a portion of intangible non-current assets (e.g., patents and trademarks) converted into expense is called amortization. The depreciation and amortization are charged for wear and tear of non-current assets. The first entry of depreciation and amortization is reduction from non-current assets and the second entry would be reduction from other equity as it needs to be recognized as expense.

2. Provision for fringe benefits, warranties, etc.: Companies incur salaries and material expenses in the process of generation of revenue in a particular accounting period. However, a portion of expenses related to current-year sales revenue will be incurred in the future. For example, employees are paid only a part of their cost in the form of salaries and a portion of employees' cost is deferred in the form of gratuity, leave encashment, etc., to the future period. Similarly, post-sale service cost of current-year sale of goods and services is



deferred to the future period. According to matching principle of accounting, such deferred expenses related to current-year revenue need to be recognized as expenses in the current year. Hence, the first entry of provision for gratuity and warranties given in Table 4.5 would be addition to liabilities as payment would occur in the future and the second entry of this adjustment would be deduction from other equity as it has to be recognized as expense in current accounting period.

3. Write-off of prepaid expenses and other assets:

Payments made for expenses could be related to current accounting period and/or future accounting period. As per the matching principle of accounting, a portion of pre-payments made in previous accounting period needs to be recognized as expenses in the current year. Sometimes, a few assets need to be written off (converting assets into expenses) when such assets are obsolete or stolen or evaporated. The first entry of such write-off adjustment would be reduction from other equity as it is recognized as expense or loss in the current accounting period and the second entry of such adjustment would be reduction from the asset.

4. Deferred revenue: Collections made by company for revenues could be related to current accounting period and/or future accounting period. Such collections need to be recognized as revenue in that accounting period in which services are performed or goods delivered. Therefore, a portion of past advance or deferred collections from customers need to be recognized as revenue in the current accounting period if promises related to such advance or deferred revenue are performed in the current accounting period. The first entry of such adjustment, conversion of deferred revenue into actual revenue, would be deduction from deferred revenue (liability) and the second entry would be addition to other equity as it adds to the current-year profit.



Table 4.5: Effect of Adjustment Entries of Veva Company on Its Financial Statements

S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
1.	Depreciation and amortization worth ₹100.	-100			-100
2.	Provision for employee's gratuity and warranties worth ₹200.		+200		-200
3.	Prepaid insurance worth ₹2 and obsolete inventory worth ₹3 are written off in the current accounting period.	-5			-5
4.	Veva Company converts deferred revenue ₹40 into revenue in current year as promises have been delivered.		-45		+45
		-105	155		-260

The summary of double entry of each of these four adjustments is in given in Table 4.5 and the bottom row shows the net balance of each of the columns where total assets are equal to liabilities plus equity capital and other equity.



EFFECT OF BUDGETED ACTIVITIES ON FINANCIAL STATEMENTS

Budgets are blueprint of a plan. Almost all firms have budgets for their forthcoming accounting or financial period and sometimes even longer than one accounting period or financial year. Budgets are for sales, production, purchases, inventory, wages and salaries, advertisements, research and development, training, capex, cash flows, profit, etc. All these individual budgets are known as functional budgets. When such functional budgets of next year are integrated in the current year's actual financial statements, it results in budgeted balance sheet and budgeted income statement of next year. Functional budgets are important in evaluating the performance by comparing the actual performance with budgeted performance. Understanding the impact of each functional budget on financial statements, that is, financial health and performance in the next year, helps in better budgeting and allocation of limited resources.

With this brief introduction to budgets, importance of budgets and activity-wise budget or functional budgets, it is important to understand the effect of each budgeted activity on financial statements with the help of double-entry principle of accounting. Atul had collected the current-year balance sheet of VevaJo Pvt. Ltd, a subsidiary of Veva Company, and its major budgeted transactions for next year as presented below to understand the impact of budgeted activities on future financial statements.

1. Budgeted credit sales during 2019–2020: ₹1,500
2. Budgeted expenses during 2019–2020: ₹1200
3. Budgeted capex into plant and property: ₹175
4. Budgeted rights issue of equity shares: ₹50
5. Budgeted income tax: ₹30



The double entries along with their impact on financial statements of these five budgeted transactions are presented as follows:

1. The first budgeted transaction is about credit sales of ₹1,500. This transaction affects accounts receivables (assets) and current-year profit (other equity). Therefore, the first entry of this transaction would be an addition to accounts receivables (asset) and second entry would be an addition to profit (other equity).
2. The second budgeted transaction is about different budgeted expenses to be incurred during the year 2019–2020. These expenses include material, labour, administration, sales and distribution. This transaction effects assets for utilization of resources and current-year profit (other equity). Hence, the first entry of this transaction would be deduction from assets and second entry would be deduction from current-year profit (other equity).
3. The third budgeted transaction is about planned investment in plant and property. This transaction results in payment of cash and bank balance (asset) and creation of plant and property (asset). Thus, the first entry of this transaction would be deduction from cash and bank balance (asset) and second entry would be an addition to plant and property (asset).
4. The fourth budgeted transaction is about generation of funds through rights issue of equity shares. It involves collection of cash (asset) from equity shares' subscribers and addition to equity capital (equity capital). Therefore, the first entry of this transaction would be an addition to cash and bank balance and the second entry would be an addition to equity capital.

5. The fifth budgeted transaction is about payment of income tax. This would affect cash and bank balance (asset) as there is payment of cash and this would also reduce the current-year PAT. Thus, the first entry of this transaction would be deduction from cash and bank balance (asset) and second entry would be deduction from current-year profit (other equity).

After comprehending the impact of budgets on future financial health and performance, Atul made a summary of the above-mentioned five transactions' impact in Table 4.6 and net balance of each of the column where total assets are equal to liabilities plus equity capital and other equity.

Table 4.6: Effect of Functional Budgets of Veva for 2019–2020 on Balance Sheet as on 31 March 2019 (₹ in Lakh)

S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
31 March 2019	Net balances	1,481	965	239	277
1.	Budgeted credit sales during 2019–2020: ₹1,500	+1500			+1500
2.	Budgeted expenses during 2019–2020: ₹1,200	–1200			–1200
3.	Budgeted capex into plant and property: ₹175	+175 –175			

(continued)



(continued)

S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
4.	Budgeted rights issue of equity shares: ₹50	+50		+50	
5.	Budgeted income tax: ₹30	-30			-30
	Net balance on 31 March 2020	1,801	965	279	547

IN CONCLUSION

Understanding the impact of day-to-day transactions of different departments on balance sheet and statement of profit and loss is essential to forecast future financial performance and health of a company. The double-entry system of accounting is essential for understanding the impact of each transaction. According to this system, each economic transaction has two effects after which the total of assets would be equal to the total of liabilities and equity. Having thorough knowledge of impact of transactions on financial statements, managers can make better planning, budgeting and allocation decisions to improve the existing financial performance and condition.

QUIZ: REVEALING THE DOUBLE EFFECT

Show the double effect of each of the budgeted transactions on the existing balance sheet. The answer for first transaction is already given as an example.



S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
31 March 2020	Net balances	200	100	50	50
1.	Budgeted to borrow: ₹20	+10	+10	No effect	No effect
2.	Budgeted to achieve credit sales: ₹100				
3.	Budgeted capex to invest cash in plant and equipment: ₹40				
4.	Planned to achieve cash sales: ₹250				
5.	Budgeted to purchase inventory on credit: ₹125				
6.	Budgeted payments for salaries, advertisements and other marketing expense: ₹125				
7.	Budgeted provision for income tax, fringe benefits, warranties, etc.: ₹15				

(continued)



(continued)

S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
8.	Budgeted interest payment on borrowings: ₹16				
9.	Budgeted inventory used for sales: ₹100				
10.	Budgeted depreciation and amortization: ₹20				
	Net balance				

ANSWERS FOR QUIZ

S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
31 March 2020	Net balances	200	100	50	50
1.	Budgeted to borrow: ₹20	+10	+10		
2.	Budgeted to achieve credit sales: ₹100	+100			+100
3.	Budgeted capex to invest cash in plant and equipment: ₹40	-40 +40			



S. No.	Transaction	Assets =	Liabilities +	Equity Capital +	Other Equity
4.	Planned to achieve cash sales: ₹250	+250			+250
5.	Budgeted to purchase inventory on credit: ₹125	+125	+125		
6.	Budgeted payments for salaries, advertisements and other marketing expense: ₹125	-125			-125
7.	Budgeted provision for income tax, fringe benefits, warranties, etc.: ₹15		+35		-35
8.	Budgeted interest payment on borrowings: ₹16	-16			-16
9.	Budgeted inventory used for sales: ₹100	-100			-100
10.	Budgeted depreciation and amortization: ₹20	-20			-20
	Net balance	434	280	50	104



* 5 *

USING CASH FLOW STATEMENT FOR BETTER DECISIONS

A statement of cash flows is the summary of all cash receipts and cash payments of an organization in a particular period. In a cash flow statement, cash includes cash balance and cash equivalents such as bank balance, demand deposits and short-term investments with insignificant risk. Cash receipts could be in the form of cash from sales revenue, cash collection from customers, collection of dividend and interest on investment and cash collection through issue of equity shares and bonds. The cash payments could be in the form of cash used for payment of salaries, payment to suppliers, cash used to acquire plant and machine, buildings, equity shares and bonds of other companies, and cash used in the payment of interest expense, dividend and repayment of borrowings. This statement is a complement statement to the balance sheet and statement of profit and loss in assessment of financial health and performance of a company. However, this statement is different from the balance sheet and income statement in the following three ways:

1. It is easy and simple to understand because it is not based on accounting principles.
2. The statement of cash flows is the most objective statement as compared to balance sheet and statement of profit and loss. There is no judgement of managers of



a company in this statement as it exists while preparing balance sheet and statement of profit and loss. As a result, the statement of cash flows becomes the most reliable financial statement.

3. This statement would be compared with the statements of previous year and comparable companies as there is no difference in accounting methods.

CLASSIFICATION OF ACTIVITIES

In statement of cash flows, all cash receipts and payments are classified into cash flows of operating activities, investing activities and financing activities. A brief description of this classification is as follows:

1. Cash flows of operating activities: Cash inflows and outflows related to day-to-day core activities are known as cash flows from operating activities. Generally, cash inflows or receipts are shown as positive figures and cash outflows or payments are shown as negative figures in bracket. Examples of major frequent cash inflows and outflows from day-to-day core activities of a manufacturing or a service company include:

- Cash inflow from cash sales
- Cash collection from clients for goods and services delivered in the past on credit
- Advance collection from clients for goods and services to be delivered in the future
- Cash payments for salaries to employees
- Cash payments for material to suppliers
- Cash payment for production, sales, marketing and distribution expenses
- Cash payment for income taxes, etc.



Table 5.1: Cash Flows from (Used in) Operating Activities

Cash Flows from Operating Activities (Direct Method)	2019–2020
Cash receipts from customers	5,000
Cash paid to employees	(2,000)
Cash paid to suppliers	(1,000)
Income taxes paid	(500)
Net cash from (used in) operating activities (1)	1,500

An example of cash flows from operating activities is presented in Table 5.1.

2. Cash flows of investing activities: Cash inflows and outflows related to purchase of non-current assets like PPE and purchase of financial investments such as fixed deposits, mutual funds, equity shares and bonds of other companies and institutions are known as cash flows of investing activity. Even in investing activity, cash inflows or receipts are shown as positive figures and cash outflows or payments are shown as negative figures in bracket. Examples of cash inflows and outflows of investing activities are as follows:

- Payment for purchase of PPE and furniture
- Payment for purchase of fixed deposits, equity shares and bonds
- Payment for investment in partnerships, joint ventures and associates
- Cash collection for sale of PPE and furniture
- Cash collection from sales of investments
- Cash inflow from collection of dividend and interest on investments



Table 5.2: Cash Flows from (Used in) Investing Activities

Cash Flows from Investing Activities	2019–2020
Purchase of PPE	(900)
Proceeds from sale of equipment	150
Acquisition of ABC joint venture	(300)
Interest and dividend on investments received	50
Net cash from (used in) investing activities (2)	(1,000)

An example of cash flows from (used in) investing activities is presented in Table 5.2.

3. Cash flows of financing activities: Cash inflows and outflows related to generation of funds through equity issue, bonds issue and borrowings are part of financing activity. Even in financing activity, cash inflows or receipts are shown as positive figure and payments or outflows are shown as negative figures in bracket (Table 5.3). Examples of cash inflows and outflows of financing activities are as follows:

- Cash inflows from issue of equity shares
- Cash inflows from issue of bonds

Table 5.3: Cash Flows from (Used in) Financing Activities

Cash Flows from Financing Activities	2019–2020
Proceeds from issue of equity shares	1,000
Cash inflows from long-term borrowings	50
Payment of interest and dividend	(50)
Repayment of short-term borrowings	(300)
Net cash from (used in) financing activities (3)	700



- Cash inflows from borrowings
- Cash outflows for payment of dividend and interest
- Repayment of bonds and borrowings, etc.

Thus, based on major activities of corporates, cash flows are classified into operating, investing and financing activities in cash flow statement.

DIRECT AND INDIRECT METHODS OF REPORTING CASH FLOWS FROM OPERATING ACTIVITIES

There are direct and indirect methods to report cash flows from operating activities. Cash flows from operating activities under the direct method are presented in the previous section (refer to Table 5.1). Under the indirect method, cash flows from operating activities are derived from profit by adjusting non-cash revenues and expenses and non-operating revenues and expenses. As profit is based on operating and non-operating revenues and expenses and cash and non-cash revenues and expenses, such non-cash and non-operating items need to be adjusted to reverse their effect to derive net cash flows from operating activities.

Example: Veva Company's summary of transactions in a particular period is as follows:

- Cash sales revenue ₹100 from sale of goods and services
- Operating credit sales revenue ₹25 from sale of goods and services
- Non-operating income through gain on sale of investments ₹15



- Operating cash expenses ₹75
- Non-cash expenses such as depreciation and amortization ₹10

Based on the above information of Veva Company, the cash flow from operating activities (direct method) is as follows.

Cash sales revenue	100
Cash expenses	(75)
Net cash from (used in) operating activities (1)	25

Based on the above information of Veva Company, the cash flows from operating activities could be done under indirect method also. Under this method, the net cash from operating activities is derived from net profit. Hence, profit needs to be computed first and then cash flows from operating activities under indirect method. As discussed in the previous section, profit is based on accrual system. Under the accrual system, cash and non-cash items are considered while computing profit. In addition to this, profit includes non-operating items also. Accordingly, the income statement based on this limited information is as follows.

Income Statement of Veva Company

Cash sales revenue	100
Credit sales revenue	25
Gain on sale of investments	15
Total income (1)	140
Cash expenses	(75)
Depreciation and amortization (non-cash expense)	(10)
Total expenses (2)	(85)
Profit (1 – 2)	55



Now, cash flow from operating activities under indirect method with the help of profit is as follows.

Profit	55
Add: Depreciation and amortization	10
Less: Gain on sale of investments	(15)
Less: Accounts receivables	(25)
Net cash from (used in) operating activities (1)	25

The adjustments under indirect method of cash flows from operating activities of Veva are explained as follows:

- As non-cash expense depreciation was deducted from revenues while computing profit, it is added back to profit to derive net cash from operating activities.
- As gain on sale of investments was added to revenues while computing profit, it is deducted from profit to derive net cash from operating activities.
- As accounts receivable for credit sales was added to revenues while computing profit, it is deducted from profit to derive net cash from operating activities.

The major advantage of direct method of cash from operating activities is easy to understand and simple to project the future operating cash flows. The major advantage of indirect method of cash from operating activities is to understand the reasons for difference between net cash from operating activities which is ₹25 and profit which is ₹55 in this example of Veva Company. This identification of differences between net cash flows from operating activities and net profit is also known as reconciliation between income and cash from operations. The reasons for higher profit as compared to net cash from operations are non-operating income in the form of gain on sale of investments and credit sales revenue without cash inflow.



According to the Indian Accounting Standard (Ind AS) 7 Statement of Cash Flows issued by Institute of Chartered Accountants of India, companies are given choice in selecting the direct or indirect method of cash from operating activities. However, the Accounting Standard highlights their suggestion of using direct method of reporting cash flows from operating activities.

INTERPRETATION OF CASH FLOW STATEMENT

In this section, the reader would learn how to interpret cash flow statement of a company to understand financial health and performance of their company and companies of their clients, suppliers and competitors. A checklist of 11 points is presented to be used as basis for analysis of cash flow statement. Joveva Company's cash flow statement (Table 5.4) is used to understand its financial health and performance. Such understanding of cash flow statement could be used in better resource allocation and better collaboration with other stakeholders such as clients and suppliers.

Checkpoint 1. Are net cash inflows from operating activities the major source of cash inflow of a company?

The operating net cash inflows of Joveva Company are ₹345 lakh in 2020, ₹243 lakh in 2019 and ₹204 lakh in 2018. However, are these net cash inflows from operations are the major source of cash inflow of the company? The reader needs to review net cash from operating, investing and financing activities and identify the major source of cash. Generally, if major source of cash inflow is operating activity, then it means that company is generating sufficient cash inflows from operations to meet



Table 5.4: Cash Flow Statement of Joveva Company (₹ in Lakh)

	2020 March	2019 March	2018 March
Cash Flow from Operating Activities (Indirect Method)			
PAT	604	240	120
Depreciation and amortization	55	35	32
Loss on sale of equipment	10	10	14
Finance cost (interest expense)	18	20	20
Provision for bad debts	5	4	2
Gain on sale of equity and bond investments	(15)	(7)	(1)
Working capital adjustments			
Receivables	(120)	(16)	(12)
Inventory	(75)	(16)	(16)
Prepaid expenses and other current assets	(30)	(13)	(15)
Payables	10	29	36
Outstanding expenses	2	4	5
Other current liabilities	32	25	37
Taxes paid	(151)	(72)	(18)
Net cash flow from (used in) operating activities (1)	345	243	204
Cash flows from investing activities			
Purchase of PPE	(234)	(155)	(150)
Sale of PPE	5	2	3
Sale of marketable securities	(925)	2	1
Net cash flow from (used in) investing activities (2)	(1,154)	(151)	(146)

(continued)



(continued)

	2020 March	2019 March	2018 March
Cash flows from financing activities			
Repayment of borrowings	(125)	0	(3)
Borrowings	0	8	5
Interest paid	(17)	(15)	(13)
Dividend paid	(9)	0	0
Initial public offer issue	1,000	0	0
Net cash flow from (used in) financing activities (3)	849	(7)	(11)
Net increase/(decrease) in cash and cash equivalents (1 + 2 + 3)	40	85	47
Opening balance of cash and cash equivalents	144	59	12
Closing balance of cash and cash equivalents	184	144	59

cash required for capex and cash required for other things. Thus, operating activity should be the major source of cash. Operating activity as a major source of cash indicates better health and financial sustainability of company. If net cash from operating activity is negative, then it implies that the company is losing cash in the business. In the case of Joveva Company, net cash inflow from operations is the major source of cash in March 2019 and March 2018 and net cash inflow from financing activities is the major source of cash in March 2020 due to issue of equity shares. Such major sources of cash from operating activity in two years and financing activity due to equity issue in one year imply positive indicators of this company.



Checkpoint 2. Is net cash investment in capex the major application of cash?

The investment net cash outflows of Joveva Company are negative ₹1,154 lakh in 2020, negative ₹151 lakh in 2019 and negative ₹146 lakh in 2018. However, are these net cash outflows used for investing activities the major application of cash outflow of the company? A growing company uses its net cash inflow from operations and financing activity for business growth of the company. The business growth of a company depends on the extent of use of surplus cash for investing activity. Assuming other things are constant, higher investment gives higher business growth and lower investment gives lower business growth. In the case of Joveva Company, the major use of cash generated from operating and financing activities was investing activity. This company has used ₹229 lakh (i.e., 234 minus 5) in the year 2020, ₹153 (i.e., 155 minus 2) lakh in 2019 and ₹147 lakh (i.e., 150 minus 3) in 2018 for investing in capex. The investment in marketable securities during the year 2020 is an investment in short-term financial asset and it is not in the core assets of the company. These investments imply that it is a growing company.

Checkpoint 3. Is net cash flow from operations sufficient for cash required for investing activity (capex)?

The net cash inflow from operating activities is ₹345 lakh in 2020, ₹243 lakh in 2019 and ₹204 lakh in 2018. The question is whether these cash inflows of this company are sufficient for investment activity of the company? Generally, financially healthy and better performing companies would have sufficient net cash inflow from internal sources for cash



required for investments. Cash flow from operating activities is an internal source of cash. Sufficient internal sources of cash for investment requirement are treated as safe and healthy way of sourcing the funds for investment. In the case of Joveva Company, investment requirement in PPE is ₹229 lakh (i.e., 234 minus 5) in the year 2020, ₹153 (i.e., 155 minus 2) lakh in 2019 and ₹147 lakh (i.e., 150 minus 3) in 2019. The net cash inflow from operating activities is ₹345 lakh in 2020, ₹243 lakh in 2019 and ₹204 lakh in 2018. These figures of Joveva Company indicate that the net cash from operating activities was sufficient for net cash used in investing activity during the financial years ending 31 March 2018 and 31 March 2019. However, net cash from operations was not sufficient for cash required in investing activity in the financial year ending 31 March 2020. The company has used cash from financial activity for the deficit cash required for investment in the year 2020.

Checkpoint 4. Is net cash flow from operations sufficient for not only cash required for investing activity but also for interest cost payment?

In the case of Joveva Company, the net cash inflow from operating activities is ₹345 lakh in 2020, ₹243 lakh in 2019 and ₹204 lakh in 2018. The question is whether these net cash inflows from operating activities of this company are sufficient for investment activity and interest cost payment of the company? The financial health of a company depends on how efficiently a company could internally source cash not only for cash required for investment for future business growth but also to meet the fixed financial obligations. Normally, fixed obligations include payment for interest on borrowings and fixed lease payments. If a company defaults such financial



obligations, the consequences would be bad for the company in the future. If a company is able to meet such cash requirement for investment activity and financial obligations, it is a financially healthy company. The reader needs to assess the ability of the company to meet such requirement to analyse the financial health in the future as well. In the case of Joveva Company, the cash flows of financing activity include payment of interest on borrowing as ₹17 lakh in 2020, ₹15 lakh in 2019 and ₹13 lakh in 2018. When these figures are compared with net cash inflows from operating activities, it indicates that this company has sufficient net cash flows from operating activities for investments in capex and interest payments. These figures reveal that the financial health of this company is stable.

Checkpoint 5. Is net cash flow from operations sufficient for not only cash required for investing activity and interest cost payment but also for dividend payment?

The dividend obligation of Joveva Company was ₹9 lakh in 2020 and there was no dividend in 2019 and 2018. Now the question is whether this company has sufficient cash inflows from operating activities to cover dividend payment obligation along with investment and interest payment requirements? In an emerging country like India, companies may be expected to pay the dividend to their owners to maintain the owners' trust although such payment is not compulsory as per law. In such environment, there has to be sufficient net cash from operating activities not only for investment and interest payments but also for dividend payment. The analysis of net cash inflows from operating activities, payment obligations of the company for investment, interest cost and dividend reveal that the net cash from operating activities of the company is greater than the total requirement for investing activity,



interest payment and dividend payment. Such analysis also implies that this company's financial health is stable.

Checkpoint 6. Is investment in capex greater than depreciation and amortization?

Joveva has used ₹229 lakh (i.e., 234 minus 5) in the year 2020, ₹153 lakh (i.e., 155 minus 2) in 2019 and ₹147 lakh (i.e., 150 minus 3) in 2018 for investing in capex as investment. Are these figures of investment enough to say that this company is investing for expansion and diversion of its activities? The answer for this question depends on analysis of amount of investment, and depreciation and amortization. The investment in non-current assets such as PPE and patents indicates the creation of business capacity. On the other hand, depreciation and amortization indicate wear and tear in non-current assets. There is a need to maintain the existing level of non-current assets. This is possible when investment in capex is at least equal to depreciation and amortization assuming there is no inflation in case of non-current assets. If there is any inflation, the investment in capex should be more than depreciation and amortization to maintain the existing level of non-current assets. If a company is high growth company, the investment in capex would be many times of depreciation and amortization. In the case of Joveva Company, the depreciation and amortization are ₹55 lakh in 2020, ₹35 lakh in 2019 and ₹32 lakh in 2018. This company has used ₹229 lakh (i.e., 234 minus 5) in the year 2020, ₹153 (i.e., 155 minus 2) lakh in 2019 and ₹147 lakh (i.e., 150 minus 3) in 2018 for investing in capex. These figures of two indicators imply that capex of this company is many times higher than depreciation and amortization. Thus, this company is a growing company.



Checkpoint 7. What are free cash flows?

The free cash flow is one of the most frequently used variables by equity researchers in capital market for valuation of the company. Higher free cash flows imply higher valuation of equity of the company. Hence, it is important to review free cash flows of companies. The difference between net cash flows from operating activities minus cash invested in capex is known as free cash flows. In the case of Joveva Company, the free cash flows are ₹116 lakh in 2020 (i.e., 345 minus 234 plus 5), ₹90 lakh in 2019 and ₹57 lakh in 2018. These free cash flows imply that financial health of this company is stable. Generally, higher free cash flows create higher valuation and lower free cash flows result in lower valuation according to corporate valuation based on the free cash flow approach. Hence, it is essential to maximize the free cash flows of a company.

Checkpoint 8. Is net working capital going to improve the short-term financial health of a company?

The financial resources which are available for day-to-day obligations and short-term financial obligation of a company are called net working capital. Such financial resources are in the form of current assets. In accounting, the difference between current asset and current liabilities is known as net working capital. If it is a growing company, then it has to scale up its net working capital to maintain sufficient liquidity in short-term and to keep healthy financial condition. The cash flows from operating activity indicate whether there is net investment in working capital or net withdrawal of working capital. If net amount of working capital adjustments



is negative, it indicates that the company has invested cash in working capital to scale up the working capital. Contrary to this, if net amount of working adjustment is positive, it indicates that the company has withdrawn cash from working capital which would reduce the liquidity of the company. In the case of Joveva Company, the total working capital adjustment is negative ₹181 lakh in 2020, positive ₹13 lakh in 2019 and ₹35 lakh in 2018. These figures imply that in 2018 and 2019, the company withdrew cash from working capital. However, the company invested large cash in working capital in the year 2020. These figures imply that there is increase in working capital in the last three years making short-term financial health stronger.

Checkpoint 9. What is quality of profit?

Profit is one of the most frequently used indicators from financial statements to evaluate the performance and financial health of a business organization. However, it is advisable to evaluate the quality of profit before using such variable as an indicator of performance of a company. The quality of profit of a company in a particular period is based on its ability to generate cash. For example, Company A's net profit (PAT) is ₹10 and net cash from operating activities is ₹12. The quality of profit ratio is 1.2:1 which means that net cash from operating activities is ₹1.2 for profit of ₹1. This ratio is known as quality of profit ratio. Generally, higher quality of profit ratio indicates better quality of profit. In the case of Joveva Company, the ratio of net cash from operating activities to PAT is 0.57 in 2020, 1.01 in 2019 and 1.70 in 2018. This quality ratio in three-year period indicates that there is decline in quality of profit from 1.70 in 2018 to 0.57 during 2020. Such decline in quality of profit is a concern in the case of Joveva Company.



Checkpoint 10. What is the interest coverage ratio to understand the ability of the company to honour interest cost?

Ability to pay interest and maintain good financial relation with bankers and lenders is essential for any company to have better bargaining powers and to have favourable terms and conditions while generating funds in future. In this regard, a company needs to evaluate its ability to pay interest and take actions to avoid defaults, if any. Hence, comparison of net cash from operating activities and interest payment obligations is essential. The relation between these two variables is known as interest coverage ratio. Higher ratio implies healthy financial condition of the company. In the case of Joveva Company, such ratio is 20.29 times in 2020, 16.2 times in 2019 and 15.69 times in 2018. It means that the company's cash flows from operations were 20 times higher than interest obligation in 2020 as compared to 15 times during 2018. These figures convey that net cash flows from operating activities are manifolds of interest payment of the company and ability of the company to pay interest is high.

Checkpoint 11. What is the trend in net cash flow from operations, net cash used in investing activity and net cash flow (used in) from financing activity?

The trend of net cash flows from operating activities, net cash used in investing activities and net cash from (used in) financing activities over a period of time is essential to understand the financial health. Generally, net cash from operating activities should be uptrend showing sustainability



and growth in operation of business. Net cash used in investing activities should also be uptrend, showing an increasing trend in investments of the company for future growth. However, the trend of net cash related to financing activities depends on business strategy and environment of the company. The continuous generations of funds through borrowings may add to financial risk and not generating funds through borrowings may also indicate inability of company to generate funds at lower cost. In the case of Joveva Company, the net cash flows from operating activities are growing continuously and net cash investments are also growing. The company also could generate funds through issue of equity shares. These trends convey healthy financial condition of this company.

IN CONCLUSION

Understanding a cash flow statement is vital in evaluating the creditworthiness of a company. The ability of a company to honour its short- and long-term financial obligations directly depend on cash flows of a company. Cash flow statement, a complementary financial statement to balance sheet and statement of profit and loss, provides the most comparable and reliable financial information for financial evaluation. Hence, liquidity evaluation, growth evaluation, profitability evaluation and solvency evaluation of a company while doing business should be based on cash flows as well. Making business decisions using information related to cash flows would help the managers of a company in better decision-making.



QUIZ: CASH FLOW STATEMENT OF TATA MOTORS

	Year Ended 31 March 2019	Year Ended 31 March 2018
Cash flow from operating activities (indirect method)		
Profit/(loss) for the year	2,020.60	(1,034.85)
Adjustments for:		
Depreciation and amortization expense	3,098.64	3,101.89
Allowances/(reversal) for trade and other receivables	170.9	(109.19)
Inventory write-down/(reversal) (net)	42.13	162.87
Provision for impairment of investment in subsidiary companies	241.86	0
Write-off/Provision of capital in work in progress and intangibles under development (net)	180.66	962.98
Exceptional item others	109.27	0
Share-based payments	8.44	0.00
Mark-to-market on investment measured at fair value through profit or loss	(1.9)	(2.03)
Loss on sale of assets (net) (including asset scrapped /write-off)	223.94	689.17
Profit on sale of investment in subsidiary company	(332.95)	0

(continued)



(continued)

	Year Ended 31 March 2019	Year Ended 31 March 2018
Profit on sale of investment at fair value through profit or loss (net)	(69.27)	(103.17)
Gain on fair value of market interest on loans	(13.37)	(6.02)
Tax expenses	378.33	87.93
Finance cost	1,793.57	1,744.43
Interest income	(335.87)	(397.71)
Dividend income	(1,526.25)	(1,054.69)
Foreign exchange loss (net)	178.26	49.24
Cash flow from operating activities before changes in the following assets and liabilities:	6,166.99	4,090.85
Trade receivables	164.50	(1,217.44)
Loans and advances and other financial assets	(276.11)	(1,091.81)
Other current and non-current assets	204.77	429.86
Inventories	966.00	(277.80)
Trade payables and acceptances	(725.29)	2,763.65
Other current and non-current liabilities	323.95	(138.51)
Other financial liabilities	(892.00)	(957.23)
Provisions	542.04	540.78
Cash generated from operations	6,474.85	4,142.35
Income tax paid (net)	(182.22)	(8.41)
Net cash from operating activities (1)	6,292.63	4,133.94



	Year Ended 31 March 2019	Year Ended 31 March 2018
Cash flows from investing activities		
Payment for PPE	(2,790.45)	(1,378.58)
Payment for other intangible assets	(1,993.03)	(1,444.37)
Proceeds from sale of PPE	30.25	28.15
Investment in mutual funds purchased (net)	413.74	1,025.59
Investment in subsidiary companies	(837.98)	(300.00)
Purchase of business from a subsidiary company	(0.1)	0
Investment in joint ventures	0	(2.5)
Loans given to joint ventures	(3.75)	0
Loans given to subsidiary companies	(0.5)	0
Investment in other companies	0	(41.63)
Sale of investment in a subsidiary company	532.96	0
Sale of investment in other companies	5.18	0
(Increase)/decrease in short-term inter-corporate deposits	(2)	60
Deposits with financial institution	(500.00)	0
Deposits/restricted deposits with banks	(827.72)	(768.67)
Realization of deposits/restricted deposits with banks	257.08	657.71

(continued)



(continued)

	Year Ended 31 March 2019	Year Ended 31 March 2018
Interest received	327.16	399.34
Dividend received	1,568.61	1,054.69
Net cash used in investing activities (2)	(3,820.55)	(710.27)
Cash flows from financing activities		
Proceeds from issue of shares held in abeyance	0	0.00
Proceeds from long-term borrowings	3119.71	1621.8
Repayment of long-term borrowings	(3,823.69)	(587.1)
Proceeds from short-term borrowings	6,274.19	3,644.7
Repayment of short-term borrowings	(5,153.61)	(6,823.28)
Net change in other short-term borrowings (with maturity up to three months)	(588.97)	1,139.44
Dividend paid (including dividend duration tax)	(2.63)	(2.75)
Interest paid (including discounting charges paid, ₹449.04 crores (31 March 2018, ₹478.28 crores))	(2,354.7)	(2,098.44)
Net cash used in financing activities (3)	(2,529.7)	(3,105.63)
Net increase/(decrease) in cash and cash equivalents	(57.62)	318.04



	Year Ended 31 March 2019	Year Ended 31 March 2018
Cash and cash equivalents as on 1 April (opening balance)	546.82	228.94
Exchange fluctuation of foreign currency bank balance	(1.8)	(0.16)
Cash and cash equivalents as on 31 March (closing balance)	487.40	546.82

Based on Tata Motors cash flow statement, answer¹ the following questions.

1. What is the major source of cash inflow of Tata Motors in the year 2018–2019?
 - a. Operating activities
 - b. Investing activities
 - c. Financing activities
2. What is the major application of cash of Tata Motors in the year 2018–2019?
 - a. Operating activities
 - b. Investing activities
 - c. Financing activities
3. The net working capital of this company during 2018–2019 has_____.
 - a. Increased
 - b. Decreased
 - c. Constant



4. Whether this company has enough net cash inflow from operations to meet cash required for investing activity.
 - a. Yes
 - b. No
 - c. Data not enough
5. Whether this company has enough net cash inflow from operations to meet cash required for investing activity and interest payment obligation?
 - a. No
 - b. Yes
 - c. Data not enough

¹ Answers of quiz

1. a 2. b 3. a 4. a 5. b



* 6 *

ANALYSIS OF THE MUCH-HYPED BREAK-EVEN

In Chapters 1–5, the focus was on understanding and analysing corporate financial statements for improving the business performance. Managers could enhance the business performance with thorough understanding and analysis of financial statements of their own organization and financial statements of stakeholders such as customers, suppliers and industry. However, the information which is available in financial statements such as balance sheet, statement of profit and loss, and cash flow statement is confronted with a few flaws while using it for managerial decision-making. Managers while making decisions need historical as well as estimated information, but financial statements provide only historical information. Managers need product-wise, region-wise, segment-wise and value chain-wise cost information for better decisions, but financial statements provide only corporate-level information. Managers need financial information on quarterly basis, monthly basis, fortnightly, weekly and sometimes daily basis for effective decision-making. However, the audited financial statements are available only once in a year.

These flaws of financial statements while using them in business planning and decision-making could be avoided with the help of cost and management accounting (CMA)



reports. CMA helps in three ways in business performance improvement. One, it accumulates the cost information of multiple products/services/processes for future needs. Two, it helps in evaluation of performance of products, customers, strategic business units, etc. Three, it enables in making better managerial decisions based on cost information.

Therefore, the present chapter deals with understanding the cost classification for better cost management and application of variable and fixed cost in computing break-even point and examination of cost–volume–profit (CVP) relationship.

INTRODUCTION TO COST

The economic value of resources sacrificed to achieve an objective or outcome is called cost. Resources in the form of material, labour and others in the form of rent, electricity, depreciation, etc., are sacrificed to produce or deliver a product or service. The sum of all such resources is called cost of a product or service. A manager needs to understand thoroughly cost of a business organization for better managerial decision, controlling the cost as per estimates and cutting the costs to gain the cost advantage in the market for business performance improvement. Cost classification as variable and fixed cost, direct and indirect cost, manufacturing cost, administration cost, and selling and distribution cost are most frequently used terms in cost management. These classifications are discussed briefly in the following sections.

CLASSIFICATION OF COSTS BASED ON VARIABILITY

Costs are classified into variable cost, fixed cost and semi-variable cost based on their variability.



1. Variable costs: The costs which vary in total in proportion to production or sales output are known as variable costs. These costs would be zero when there is no production, would increase when there is increase in production or sales output and decrease when there is decrease in production or sales output. For example, cost of material used in production, hour-based labour used in production, unit-wise sales commission paid to salesmen, etc., are the examples of variable cost. Such material and labour cost would decrease when there is decrease in volume and increase when there is increase in volume of production and sales of the products. The total variable cost would be different at different levels of output. However, variable cost per unit remains the same. This concept of variable cost could be understood better with the help of the following example.

The variable costs of a product are material cost used in production, ₹10 per unit, production labour cost, ₹8 per unit, material cost used in packing, ₹2 per unit, and sales commission, ₹1 per unit. The total variable costs at different levels of plan would be as follows.

Total Variable Cost

Cost Item	5 Units	20 Units	50 Units	100 Units
Production material cost at the rate of ₹10	50	200	500	1,000
Labour cost at the rate of ₹8	40	160	400	800
Packaging material cost at the rate of ₹2	10	40	100	200
Sales commission at the rate of ₹1	5	20	50	100

(continued)



(continued)

Cost Item	5 Units	20 Units	50 Units	100 Units
Total variable cost at the rate of ₹21	105	420	1,050	2,100
Variable cost per unit (₹)	21	21	21	21

As observed in the above example, the variable cost per unit is constant when volume is 5 units or 20 units or any other quantity. However, the total variable cost keeps varying. Therefore, the total variable cost varies in proportion to the production output and variable cost per unit remains constant.

2. Fixed cost: The cost which is constant at different levels of production output in a specific period is known as fixed cost. The fixed costs would be same whether the production output is zero or increases or decreases. These costs incurred by a company are independent of level of output or level of sales. However, fixed cost per unit keeps varying. Fixed costs per unit decreases when there is increase in the level of output or sales and it increases when there is decrease in the level of output or sales. Fixed salaries of employees in production, sales, distribution and administration departments, rent of building used for production, operations, distribution, etc., and depreciation on fixed assets used in different functions are the examples of fixed cost in a business organization. The following example would help in better understanding of the concept of variable cost.

The fixed costs of a product are the salary of the production supervisor, ₹40,000 per month, factory building rent, ₹20,000 per month, depreciation on plant and equipment, ₹10,000 per month, and salesmen salaries, ₹15,000 per month. The total fixed costs at different levels of plan are as follows.



Total Fixed Cost

Cost Item	5 Units	20 Units	50 Units	100 Units
Salaries of production supervisor	40,000	40,000	40,000	40,000
Factoring building rent	20,000	20,000	20,000	20,000
Depreciation on plant and equipment	10,000	10,000	10,000	10,000
Salesmen salaries	15,000	15,000	15,000	15,000
Total fixed cost	85,000	85,000	85,000	85,000
Fixed costs per unit (₹)	17,000	4,250	1,700	850

As observed in the above example, it is clear that the total fixed cost is constant, ₹85,000, when the volume is 5 units or 50 units or any other volume. However, the fixed cost per unit is ₹17,000 when volume is 5 units and ₹850 when volume is 100 units. Thus, the total fixed cost remains constant at different levels of production or sales and fixed cost per unit keeps changing at different levels.

3. Semi-variable cost: The costs that are partly variable and partly fixed are called semi-variable costs. This cost item has features of both variable and fixed costs. The salary of a salesman could be partly fixed and partly variable assuming that the salesman is paid a fixed salary per annum and also paid variable commission on the volume of sales. In this example, the fixed salary of the salesman is fixed cost and his/her commission is an example of variable cost. As this example is a combination of variable as well as fixed cost, it is called semi-variable cost. Similarly, electricity cost could be partly fixed and partly variable based on the consumption of electricity. This concept of semi-variable cost could be understood better with the help of the following example.



Semi-variable Cost

Cost Item	5 Units	20 Units	50 Units	100 Units
Manufacturing power cost (fixed cost ₹1,000 and variable cost at the rate of ₹1)	1,005	1,020	1,050	1,100
Telephone bill (fixed cost ₹100 and variable cost at the rate of ₹1)	105	120	150	200
Compensation of salesmen (fixed cost ₹10,000 and variable cost at the rate of ₹100)	10,500	12,000	15,000	20,000
Production royalties (fixed cost ₹10 and variable cost at the rate of ₹1)	15	30	60	110
Total fixed cost	11,625	13,170	16,260	21,510

As it can be seen in the above example, semi-variable costs have the features of both fixed and variable costs. In these four examples for semi-variable cost, the division of semi-variable into fixed and variable is essential for cost management.

COST CLASSIFICATION BASED ON TRACEABILITY

Total costs are also classified into direct cost and indirect cost based on traceability. The reader needs to understand cost unit or cost object before proceeding to understand direct and indirect cost. The cost object is anything which requires a separate measurement of cost. It could be a product or a service



or a department or a unit or a branch. For example, when a manager would like to know the cost of Product No. A101, this product becomes the cost object. When another manager would like to know the cost of Mumbai region operations, this region becomes the cost object. Suppose a production manager would like to know the cost of production function, then, this production department becomes cost object. Thus, any product or service or activity whose cost is to be ascertained is known as cost object or cost unit.

Direct cost: The cost which is easily traceable to the cost object is known as direct cost. For example, when production department is the cost object, production material cost, production labour cost, production light and power, production building rent, production facilities' depreciation and any other expense incurred in production department are the direct costs of production department. When Mumbai region of a business organization is the cost object, all the costs directly attributable to Mumbai region such as material cost, labour administration cost, and sales and distribution cost are direct costs of Mumbai region. These direct costs could be direct variable costs or direct fixed costs. For example, when production department is the cost object, production material cost is the example of direct variable costs and production facilities' depreciation is the example of direct fixed costs. The misconception that all variable costs are direct costs is not true. Thus, direct costs could be variable or fixed costs.

Indirect cost: The cost which is not easily traceable to the cost object is known as indirect cost. For example, when production department is the cost object, central administration cost, manpower development cost, employees' welfare cost, health centre cost, legal department cost, etc., are not only related to production department but also related to administration, marketing, operations, sales and distribution departments.



As these costs are related to multiple departments or functions, they are not directly attributable to production department. Therefore, these costs are known as indirect costs of production department. Indirect costs are also known as overheads or common costs. These indirect costs could be indirect variable costs or indirect fixed costs. For example, when production department is the cost object, production power cost is the example of indirect variable costs and corporate office buildings' depreciation is the example of indirect fixed costs. The misconception that all fixed costs are indirect costs is not true. Thus, indirect costs could be variable or fixed costs.

COST CLASSIFICATION BASED ON MANAGERIAL FUNCTION

Total costs of a company or a division or a product could be classified as production cost, administration cost, and sales and distribution costs on the basis of managerial functions.

Production cost: All direct and indirect costs of production function or all variable and fixed costs of production function are known as production costs. Direct material, direct labour, indirect material, indirect labour, salary of production managers, depreciation on production infrastructure, etc., used for production function are some of the examples of production cost. Thus, these production costs can be further called production direct variable cost, production indirect variable cost, production direct fixed cost and production indirect fixed cost.

Administration costs: All direct and indirect costs of administration function or all variable and fixed costs of administration function are called administration costs. Salaries of administration function staff, office supplies used in



administration function and depreciation on administration department assets are the examples of administration costs. Thus, these administration costs can be further called administration direct variable cost, administration direct fixed cost, administration indirect variable cost and administration indirect fixed cost.

Sales and distribution costs: All variable and fixed costs or direct and indirect costs of sales and distribution function are known as sales and distribution costs. Salaries incurred in sales and distribution, depreciation on equipment used in sales and distribution, and sales commission are some of the examples of sales and distribution costs. Thus, these sales and distribution costs can be further called sales and distribution direct variable cost, sales and distribution indirect variable cost, sales and distribution direct fixed cost and sales and distribution indirect fixed cost.

USING VARIABLE COST AND FIXED COST FOR CVP ANALYSIS

This section helps in understanding the interrelation among cost, volume and profit (CVP) by classifying the costs into variable and fixed costs. In other words, it addresses certain managerial questions such as what is the break-even-point? What will be profit at different levels of volume in the future? What will be cost at different levels of volume? What should be the volume to achieve a certain amount of profit? What should be cost to achieve a certain amount of profit at a certain quantity of volume? What should be the composition of variable and fixed costs? What is the business risk under different cost compositions? Such use of variable and fixed costs in CVP analysis is presented with the help of the following simple example.



Mr Raj Tor is an entrepreneur whose experience is in trading different software products. Recently, he has come across an educational software which helps in online teaching for college and school students, online business training programmes and online meetings. He is contemplating to sell this software product in Mumbai and other metro cities in India. This software product is known as SoftEdu. He would purchase each unit of this software at ₹180,000 and sell it to the customers at ₹200,000. He has a privilege of returning the unsold software units to the supplier. He is planning to sell these software units in an educational mall. He has to pay ₹200,000 per month as a rent to the mall. He has now multiple questions about this proposal of trading the software product which are discussed as follows.

Checkpoint 1. What is variable cost and fixed cost of SoftEdu in this proposal?

In this trading business of SoftEdu, there are only two cost items, that is, purchase cost of SoftEdu, ₹180,000 per unit, and rent, ₹200,000 per month. The purchase cost of SoftEdu is variable cost and payment of rent every month is fixed cost.

Checkpoint 2. Raj wants to know what profits he would make for different quantities of SoftEdu that he might sell.

The income statement in CVP analysis is different from statement of profit and loss. The income statement of CVP analysis starts with sales. There are two steps to arrive at profit in CVP income statement. First, total variable cost is deducted from sales revenue to arrive at contribution margin. Contribution margin is the margin available for recovery

of fixed cost. Second, the total fixed cost is reduced from contribution margin to arrive at the profit. The total profits at different levels of sales quantity under the CVP approach would be as follows.

	5 Units	8 Units	20 Units
Total sales revenue (at ₹200,000 per unit)	1,000,000	1,600,000	4,000,000
Variable cost:			
Purchase cost of software (at ₹180,000 per unit)	(900,000)	(1,440,000)	(3,600,000)
Total contribution	100,000	160,000	400,000
Fixed cost:			
Rent of mall (C)	(200,000)	(200,000)	(200,000)
Profit (loss)	(100,000)	(40,000)	200,000

The previous table shows profits at different levels of sales volume. The profit (loss) if 5 units are sold is loss of ₹100,000, profit (loss) when 8 units are sold is loss of ₹40,000 and profit (loss) when 20 units are sold is ₹200,000. Mr Raj may prepare similar statements to know the profit if sales volume were 30, 40, 50, etc. This enables Mr Raj in planning targeted sales and targeted profit.

Checkpoint 3. Mr Raj wants to know break-even point of his business?

A break-even point is the sales volume at which total sales revenue is equal to total costs. In other words, it is the sales volume at which profit is zero. In the case of start-up firms



or firms and industries suffering losses, it is essential to know the break-even point and aim to cross such sales level. The break-even analysis is even more important in the case of new start-up companies, products and divisions. It is also equally important in the case of existing loss-making products, business divisions and units. There are multiple ways of computing break-even point. One of the easy ways to compute is as follows:

$$\text{Break-even volume} = \frac{\text{Total fixed costs}}{\text{Contribution margin per unit}} \quad (6.1)$$

where contribution margin per unit = selling price per unit minus variable cost per unit.

Based on this equation, the break-even point of SoftEdu product would be as follows:

$$\begin{aligned} \text{Break-even volume} &= \frac{200,000}{200,000 - 180,000} \\ &= 10 \text{ units of SoftEdu.} \end{aligned} \quad (6.2)$$

Another way of computing break-even point is as follows:

$$\text{Total sales revenue} = \text{Total costs} \quad (6.3)$$

The above equation could be expanded as follows:

$$\begin{aligned} \text{Selling price per unit} \times Q &= (\text{Variable cost} \\ \text{per unit} \times Q) &+ \text{Total fixed cost} \end{aligned} \quad (6.4)$$

where Q is the break-even quantity.

Now, figures could be used in the above equation to arrive at the break-even point.

$$\begin{aligned} 200,000 \times Q &= (180,000 \times Q) + 200,000 \\ Q &= 10 \text{ units.} \end{aligned} \quad (6.5)$$



Thus, the break-even point in terms of volume is 10 units and break-even point in terms of sales revenue would be ₹1,000,000 (i.e., break-even units multiplied by selling price per unit). It means Mr Raj's business would be at no loss and no profit level if he can sell 10 units per month.

Checkpoint 4. How many units must SoftEdu sell to earn a target operating income of ₹100,000?

Mr Raj would like to know how many units he needs to sell to achieve a target operating income. The target sales volume required to achieve target operating income of ₹100,000 would be similar to computation of break-even point.

$$\begin{aligned} \text{Target sales volume (in units)} &= \\ \frac{\text{Total fixed cost} + \text{Target operating income}}{\text{Contribution margin per unit}} &\quad (6.6) \end{aligned}$$

Now, the total fixed costs, target operating profit and contribution margin per unit would be used in the above equation to derive target sales units.

$$\begin{aligned} \text{Target sales volume} &= \frac{200,000 + 100,000}{200,000 - 180,000} \\ &= 15 \text{ units of SoftEdu} \quad (6.7) \end{aligned}$$

The other way of computing target sales to achieve target operating profit is as follows:

$$\begin{aligned} \text{Selling price per unit} \times Q &= (\text{Variable cost per unit} \times Q) + \\ \text{Total fixed cost} + \text{Target operating income} &\quad (6.8) \end{aligned}$$

where Q is the target sales volume.

$$200,000 \times Q = (180,000 \times Q) + 200,000 + 100,000 \quad (6.8)$$

$$Q = 15 \text{ units of SoftEdu.}$$



Thus, the target sales volume to achieve target operating income is 15 units of SoftEdu and the target sales revenue (₹) would be 30,00,000 (15 units multiplied by selling price per unit).

Checkpoint 5. How many units must SoftEdu sell to earn a target net income of ₹90,000 assuming income tax rate is 30 per cent?

Mr Raj first need to calculate what is his target operating income with the help of net income after tax and tax rate. The target operating income for achieving target net income of ₹90,000 would be:

$$\begin{aligned}\text{Target operating income} &= \frac{\text{Target net income}}{(1 - \text{Tax rate})} \\ &= \frac{90,000}{(1 - 0.30)} = ₹128,571 \quad (6.9)\end{aligned}$$

Now, target sales would be computed with the help of target operating income. The target sales volume required to achieve target operating income of ₹128,571 would be similar to computation of break-even point.

$$\begin{aligned}\text{Target sales volume} &= \frac{\text{Total fixed cost} + \text{Target operating income}}{\text{Contribution margin per unit}} \quad (6.10)\end{aligned}$$

$$\begin{aligned}\text{Target sales volume} &= \frac{200,000 + 128,571}{200,000 - 180,000} \\ &= 16.4286 \text{ units of SoftEdu} \quad (6.11)\end{aligned}$$

The other way of computing target sales to achieve target operating profit is as follows:

$$\begin{aligned}\text{Selling price per unit} \times Q &= (\text{Variable cost per unit} \times Q) + \\ &\text{Total fixed cost} + \text{Target operating income} \quad (6.12)\end{aligned}$$



where Q is the target sales volume.

$$200,000 \times Q = (180,000 \times Q) + 200,000 + 128,571 \quad (6.13)$$

$$Q = 16.4286 \text{ units of SoftEdu.}$$

Thus, the target sales volume to achieve target operating income is 16.4286 units of SoftEdu and the target sales revenue (₹) would be 3,285,720 (16.4286 units multiplied by selling price per unit).

Checkpoint 6. How many units must SoftEdu sell to earn a target retained earnings of ₹50,000 after paying a dividend of ₹50,000 assuming income tax rate is 30 per cent?

Mr Raj would like to have retained earnings of ₹50,000 as target in the forthcoming month. He would like to know the sales target to achieve the retained earnings. The net income retained within the firm after paying dividend to owner is called retained earnings. Therefore, the target net income required to have retained earnings ₹50,000 and dividend ₹50,000 would be ₹100,000.

Now, the target operating income for achieving target net income of ₹100,000 would be:

$$\text{Target operating income} = \frac{100,000}{0.70} = ₹142,857 \quad (6.14)$$

The target sales volume required to achieve target operating income of ₹142,857 would be similar to computation of break-even point.

$$\text{Target sales volume} = \frac{\text{Total fixed cost} + \text{Target operating income}}{\text{Contribution margin per unit}} \quad (6.15)$$



$$\begin{aligned}\text{Target sales volume} &= \frac{200,000 + 142,857}{200,000 - 180,000} \\ &= 17.1429 \text{ units of SoftEdu} \quad (6.16)\end{aligned}$$

The other way of computing target sales to achieve target operating profit is as follows:

$$\begin{aligned}\text{Selling price per unit} \times Q &= (\text{Variable cost per unit} \times Q) + \\ &\text{Total fixed cost} + \text{Target operating income} \quad (6.17)\end{aligned}$$

where Q is the target sales volume.

$$200,000 \times Q = (180,000 \times Q) + 200,000 + 142,857 \quad (6.18)$$

$$Q = 17.1429 \text{ units of SoftEdu.}$$

Thus, the target sales volume to achieve target retained earnings ₹50,000 and dividend ₹50,000 is 17.1429 units of SoftEdu and the target sales revenue (₹) would be 3,428,580 (17.1429 units multiplied by selling price per unit).

Checkpoint 7. Raj expects selling 20 units. He is considering placing an advertisement describing the product and its features in the educational mall brochure. The advertisement will cost ₹140,000. This cost is a fixed cost because it will not change regardless of the number of units Raj sells. He expects that advertising will increase sales by 25 per cent, that is, to 25 packages. Should Raj advertise to maximize sales?

Like everyone, Raj knows the need of advertisement. However, he would like immediate financial gain from advertisement. He would like to advertise in the brochure only if it is financially profitable. In this case, Raj needs to know the profit if sales volume is 20 without advertisement and the profit if sales



volume is 25 units with advertisement. The computations are as follows.

	Without Advertisement 20 Units	With Advertisement 25 Units
Total sales revenue (at ₹200,000 per unit)	4,000,000	5,000,000
Variable cost		
Purchase cost of software (at ₹180,000 per unit)	(3,600,000)	(4,500,000)
Total contribution margin	400,000	500,000
Fixed cost		
Rent of mall (C)	(200,000)	(200,000)
Advertisement cost	–	(140,000)
Profit (loss)	200,000	160,000

The above computations indicate that the profit without advertisement is ₹200,000 and the profit with advertisement is ₹160,000. There will be decrease in profit by ₹40,000 if Raj advertises. Hence, based on financial consideration alone, he should not advertise. Thus, Raj decided not to advertise in the brochure.

Checkpoint 8. Raj expects selling 40 units. Raj is planning whether to reduce the selling price to ₹190,000. At this reduced price, he thinks he will sell 30 units. At this revised quantity, the wholesaler who supplies SoftEdu software will sell the packages to Raj for ₹175,000 per unit instead of ₹180,000. Should Raj reduce the selling price?

Now, Raj can take a better decision if he knows the profit under two alternative scenarios. In this case, Raj needs to know the



profit if sale volume is 20 without reduction in price and profit if sales volume is 30 units with reduction in selling price. The computations are as follows.

	Without Reduction in selling Price 20 Units	With Reduction in Selling Price 30 Units
Total sales revenue	4,000,000	5,850,000
Variable cost		
Purchase cost of software	(3,600,000)	(5,250,000)
Total contribution	400,000	600,000
Fixed cost		
Rent of mall (C)	(200,000)	(200,000)
Profit (loss)	200,000	400,000

The above computations indicate that the profit without reduction in price is ₹200,000 and the profit with reduction in selling price is ₹400,000. There will be increase in profit by ₹200,000 if Raj reduces the selling price. Hence, based on financial consideration alone, Raj should reduce the selling price.

Checkpoint 9. Raj, currently, has to pay ₹200,000 as fixed rent per month and ₹180,000 per unit as purchase cost to the wholesale supplier. He is planning to change the cost structure. Suppose educational mall offers Raj three rental alternatives:

Option A: ₹200,000 fixed fee

Option B: ₹120,000 fixed rent plus 3 per cent of sales revenues

Option C: 5 per cent of sales revenue with no fixed fee

Which option is suitable for Raj and why?

Raj would like to choose the best option which gives the maximum profitability. The combination of variable cost and fixed costs is an important decision in business organization. Assuming 20 units of SoftEdu could be sold, the profit under these three options would be as follows.

Particulars	Option A	Option B	Option C
Total sales revenue (at ₹200,000 per unit)	4,000,000	4,000,000	4,000,000
Variable cost			
Purchase cost of software (at ₹180,000 per unit)	(3,600,000)	(3,600,000)	(3,600,000)
Variable rent as a percentage of sales revenue	0	(120,000)	(200,000)
Total contribution	400,000	280,000	200,000
Fixed cost			
Rent of mall (C)	(200,000)	(800,000)	0
Profit (loss)	200,000	200,000	200,000

As computed in the previous table, the profit and sales revenue under all these three options are ₹200,000 and ₹4,000,000, respectively, and are constant, and total cost ₹3,800,000 is also same under the three options. Hence, Raj would not be able to select the best option based on profitability because profit is same under all three options.

However, the combination of variable cost and fixed cost is different in three different options. In the case of Option A, the total variable cost is ₹3,600,000 and total fixed cost is ₹200,000 amounting to total cost of ₹3,800,000. In the case of Option B, the total variable cost is ₹3,720,000 (i.e., ₹3,600,000 plus



₹120,000) and total fixed cost is ₹80,000 amounting to total cost of ₹3,800,000. In the case of Option C, the total variable cost is ₹3,800,000 (i.e., ₹3,600,000 and ₹200,000) and with zero fixed cost amounting to total cost of ₹3,800,000. Thus, in all three options, the sum of variable cost and fixed cost is same with differing proportion of variable cost and fixed cost.

The break-even points would be different under these three options. In the case of Option A, the break-even point would be 10 units of SoftEdu. In the case of Option B, the break-even point would be 5 units of SoftEdu. In the case of Option C, the break-even point would be 0 units. The break-even point of Option A is the highest and break-even point of Option C is the lowest. Raj can't decide even on the basis of break-even analysis alone. He needs to connect his decision to his risk appetite also.

Mr Raj's decision to choose from one of these three options is a strategic decision. It depends on his risk-taking capacity, estimated sales demand for the product, confidence in estimated demand, etc. If he is a high risk-taking entrepreneur looking for high profits, he would select Option A. On the other hand, a risk averter would select either Option B or Option C. Raj would select Option A if forecasted demand for the product is higher to enjoy the higher profit and would select Option C if forecasted demand for the product is very low.

Checkpoint 10. What is the operating leverage of each option?

The cost structure of variable cost and fixed cost helps in understanding the business risk associated with the business organization. The operating leverage captures the business risk



based on the cost structure of a business entity. The higher fixed cost results in higher operating leverage and higher business risk, and the lower fixed cost results in lower operating leverage and lower business risk. The operating leverage is the ratio of total contribution margin to profit. It is computed with the following equation:

$$\text{Operating leverage} = \frac{\text{Total contribution margin}}{\text{Profit}} \quad (6.19)$$

Now, Mr Raj would like to know what is operating leverage of his business unit under three alternatives. Based on the above formula, the operating leverages of Options A, B and C are as follows:

$$\text{Option A} = \frac{400,000}{200,000} = 2 \text{ times} \quad (6.20)$$

The operating leverage of 2 times of Option A indicates that for every 1 per cent change in sales, the profit changes by 2 per cent. For example, when sales increase by 5 per cent, the profit increases by 10 per cent (i.e., 2 times of per cent change in sales). At the same time, when sales decrease by 5 per cent, the profit decreases by 10 per cent (i.e., 2 times of per cent change in sales).

$$\text{Option B} = \frac{280,000}{200,000} = 1.4 \text{ times} \quad (6.21)$$

The operating leverage of 1.4 times of Option B indicates that for every 1 per cent change in sales, the profit changes by 1.4 per cent. For example, when sales increase by 5 per cent, the profit increases by 7 per cent (i.e., 1.4 times of per cent change in sales). At the same time, when sales decreases by 5 per cent, the profit decreases by 7 per cent (i.e., 1.4 times of per cent change in sales). In Option B, the variation in profit is lower due to changes in sales revenue as compared to Option A.

$$\text{Option C} = \frac{200,000}{200,000} = 1 \text{ time} \quad (6.22)$$



The operating leverage of 1 time of Option C indicates that for every 1 per cent change in sales, the profit changes by 1 per cent only. For example, when sales increase by 5 per cent, the profit increases by 5 per cent only (i.e., 1 time of per cent change in sales). At the same time, when sales decrease by 5 per cent, the profit decreases by 5 per cent (i.e., 1 time of per cent change in sales). In Option C, the variation in profit is the lowest due to variation in sales revenue as compared to Options A and B. Option C has the lowest risk.

Thus, the decision of Mr Raj in selection from Options A, B and C depends on his demand forecast and risk-taking ability. If his demand forecast and risk-taking ability are higher, he would go for Option A and if his demand forecast and risk-taking ability are lower, he would go for Option C.

IN CONCLUSION

Cost and management accounting enable business managers in attaining relevant and timely cost information at micro level for better decision-making. Understanding of cost management commences with the knowledge of cost classification based on variability, traceability and managerial function. Costs are classified as variable and fixed costs based on variability; costs are classified as direct and indirect costs based on traceability and costs are classified as production, administration and sales and distribution costs based on managerial functions of a product or business unit.

The variable and fixed cost classification helps in understanding break-even point, CVP relationship, operating leverage and operating risk to maximize the profitability and sales and minimize the business risk.



QUIZ: ANSWER¹ THE FOLLOWING QUESTIONS USING THE GIVEN MULTIPLE CHOICES

1. Total cost which varies in direct proportion to production or sales output is called _____.
 - a. Direct cost
 - b. Fixed cost
 - c. Indirect cost
 - d. Variable cost
2. The costs which are easily traceable to a particular cost object are called _____.
 - a. Direct cost
 - b. Fixed cost
 - c. Indirect cost
 - d. Variable cost
3. Total costs which are constant in a specific period irrespective of changes in production or sales output are called _____.
 - a. Direct cost
 - b. Fixed cost
 - c. Indirect cost
 - d. Variable cost
4. Break-even point is the point where _____.
 - a. Variable cost is equal to sales revenue
 - b. Fixed cost is equal to sales revenue
 - c. Variable cost plus fixed cost is equal to sales revenue
 - d. Direct cost plus fixed cost is equal to sales revenue



5. The operating leverage of a company is 3 times, it means that _____.
- a. An increase in sales by 5 per cent would increase the profits by 15 per cent and a decrease in sales by 5 per cent would increase the profits by 15 per cent
 - b. An increase in sales by 5 per cent would increase the profits by 15 per cent and a decrease in sales by 5 per cent would decrease the profits by 15 per cent
 - c. An increase in sales by 5 per cent would decrease the profits by 15 per cent and a decrease in sales by 5 per cent would increase the profits by 15 per cent
 - d. None of the above

¹ Answers of quiz

1. d 2. a 3. b 4. c 5. b



* 7 *

THE COST OF RIGHT DECISIONS

The sales revenue and profitability of corporate entities are directly dependent on a few managerial decisions related to production, sales and marketing, outsourcing and insourcing, research and development, operations, etc. It is needless to mention that when managerial decisions related to such functions are made effectively, they help in improving the sales and profitability of companies. If such decisions are full of flaws, they have a negative impact on sales and profitability. In each and every managerial decision, cost plays an important role along with other variables. While making pricing decision of a product, managers consider market factors, industry factors, economic factors and factors related to competitors and customers. In addition to these factors, it is impossible to ignore the cost information while making a decision. The price fixed based on internal and external factors would be sustainable for long-term only when it is over and above the cost with a reasonable amount of profit. Thus, cost information plays an important role in pricing. If such cost information alone is incorrect, most of the times, the pricing decision would be incorrect leading either to higher price or lower price. Such incorrect pricing of products may backfire affecting sales, profitability and performance of a company negatively. When pricing decisions are full of flaws, they result in a weak product performance evaluation. This in turn results in wrong product emphasis, that is, a low performing product



would be rated as the most profitable product and a high performing product would be rated as less profitable product. Such negative consequences would negatively affect the performance at corporate level. Thus, the cost information is vital a variable in any managerial decision-making and ascertaining right cost information is even more important for right managerial decision-making to improve the performance of companies. Therefore, this chapter deals with traditional method of cost ascertainment, activity-based costing (ABC) method of cost ascertainment and role of such cost information in maximizing the performance of companies. These are the two widely used cost ascertainment methods in any company in India and abroad.

FULL COST

Total cost or full cost of any product or service is the sum of direct cost and a share of indirect cost. Direct costs are those costs which are easily traceable to the product or the service and indirect costs are those costs which are not easily traceable to the product or the service. Indirect costs are also known as overheads and common costs. The products or services which require a separate measurement of costs are called cost object or cost unit. As presented in Figure 7.1, the full cost of a product is direct cost of a cost object and an appropriate share of indirect cost or overheads which are common for multiple products or multiple services.

Thus, full cost of a cost object is presented as follows in equation form:

$$\text{Full cost} = \text{Direct cost} + \text{Indirect cost} \quad (7.1)$$

Direct costs are directly traced to the cost objects and indirect costs are allocated to the multiple costs either based on



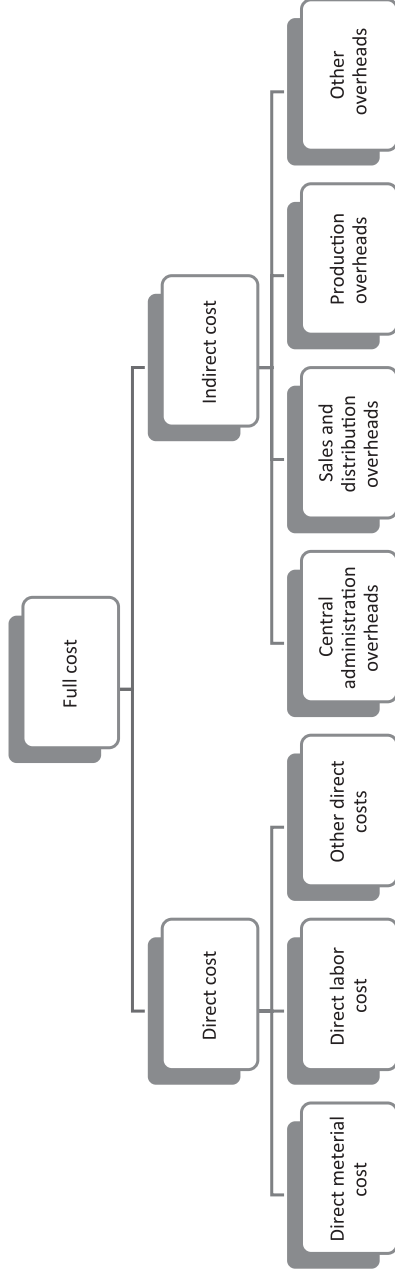


Figure 7.1: Full Cost

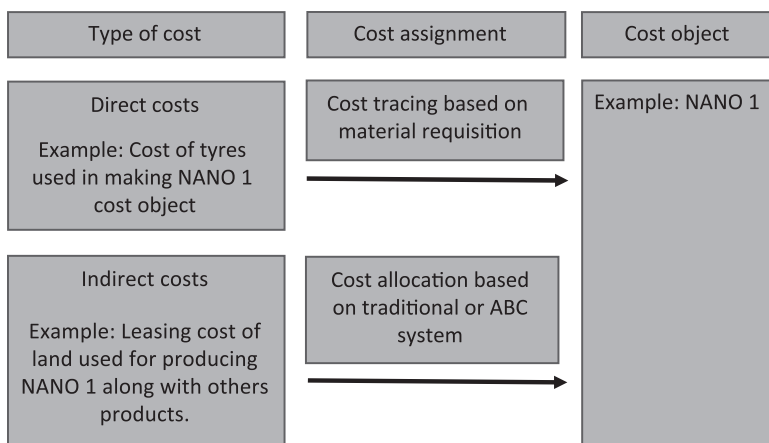


Figure 7.2: Cost Assignment

traditional costing system or ABC system as presented in Figure 7.2.

TRADITIONAL COSTING METHOD OF COST ASCERTAINMENT

The direct costs are assigned directly to the cost object based on traceability. The indirect costs are assigned to the cost object based on either traditional cost system or ABC system. Under the traditional cost system, indirect costs are assigned to cost objects based on indirect cost rate. This indirect cost rate is also known as overhead rate or burden rate or common cost rate. These indirect cost rates are originally based on the following six variables:

1. Direct labour hours
2. Machine hours
3. Direct material quantity
4. Percentage of direct material cost



5. Percentage of direct labour cost
6. Percentage of total direct cost

Companies use either one of these as basis or combination of these variables for computation of indirect cost rate. The application of indirect rates in computation of full cost by using these six variables is presented with the help of an example of Narsimha Private Limited.

Narsimha Private Limited manufactures multiple engineering components used by heavy electrical equipment. Its major products which constitute 90 per cent of total revenue are A, B, C and D. Total cost of these products is direct cost plus a share of indirect cost. The company uses simple traditional costing system to compute the full cost of their products. Such full cost information is used to compute profitability of each product (i.e., market prices minus full cost of products) and their profit margins (i.e., profit divided by market selling price). These margins of the products are used for product performance evaluation and strategic business decisions to maximize the profitability of the company. The cost, selling price and other information of these major products, A, B, C and D, is given in Table 7.1.

Table 7.1: Information for Traditional Costing

	A	B	C	D
Sales volume (units)	1,000	1,000	1,000	1,000
Direct material cost (₹)	150	100	50	25
Direct labour cost (₹)	100	200	300	400
Variable indirect cost per unit (₹)	150	75	50	75

(continued)



(continued)

	A	B	C	D
Total variable cost per unit (₹)	400	375	400	500
Total fixed indirect costs (₹)	10,000	10,000	12,500	12,500
Direct labour hours per unit	20	2	4	15
Machine hours per unit	2	2	2	2
Raw material kg per unit	3	8	1	3

1. Indirect cost based on direct labour hours, full cost and performance of products: The indirect cost rate based on direct labour hours in this company would be as given in Table 7.2.

The total indirect cost of the company would be sum of total variable indirect cost and total fixed indirect cost. Thus, the sum of ₹350,000 and ₹400,000 would be ₹750,000. As the direct labour hours are basis for indirect cost rate, the total direct labour hours of the company are 41,000. Now, the indirect cost rate per direct labour hour is as follows:

$$\begin{aligned}\text{Indirect cost rate or overhead rate} &= \frac{750,000}{41,000 \text{ hours}} \\ &= ₹18.29 \text{ per direct labour hour}\end{aligned}\quad (7.2)$$

The full cost, profitability and margins of Products A, B, C and D with the help of above indirect cost rate of ₹18.29 per direct labour hour would be as shown in Table 7.3.

Table 7.3 shows the total cost, profit and profit margin percentage of each product when overheads or indirect costs are allocated to products based on direct labour hours. The



Table 7.2: Computation of Burden Rate Based on Direct Labour Hours

Products	No. of Units	Labour Hours per Unit	Total Labour Hours	Variable Indirect Cost per Unit	Total Variable Indirect Cost	Total Fixed Indirect Cost
A	1,000	20	20,000	150	150,000	100,000
B	1,000	2	2,000	75	75,000	100,000
C	1,000	4	4,000	50	50,000	100,000
D	1,000	15	15,000	75	75,000	100,000
			41,000		350,000	400,000

Table 7.3: Product Performance When Burden Rate Is Based on Direct Labour Hours

	A	B	C	D
Direct material cost	150	100	50	25
Direct labour cost	100	200	300	400
Total direct cost	250	300	350	425
Indirect cost at the rate of 18.29/labour hour	365.85	36.59	73.17	274.39
Total cost	615.85	336.59	423.17	699.39
Market prices	800.00	550.00	575.00	750.00
Profit	184.15	213.41	151.83	50.61
Margin (%)	23.02	38.80	26.41	6.75
Ranking based on performance	III	I	II	IV

profit margin of Product B is 38.80 per cent, the highest among four products, and profit margin of Product D is 6.75 per cent, the lowest among four products. These margins clearly indicate that Product B should be emphasized and Product D should be given less importance in business planning and operations.

2. Indirect cost based on machine hours, full cost and performance of products: Now, indirect costs could be allocated based on machine hours. The indirect cost rate based on machine hours in this company would be as shown in Table 7.4.

The total indirect cost of the company would be sum of total variable indirect cost and total fixed indirect cost. The sum of ₹350,000 and ₹400,000 would be ₹750,000. As the machine hours are basis for indirect cost rate, the total machine hours



Table 7.4: Computation of Burden Rate Based on Machine Hours

Products	No. of Units	Machine Hours per Unit	Total Machine Hours	Variable Indirect Cost per Unit	Total Variable Indirect Cost	Total Fixed Indirect Cost
A	1,000	2	2,000	150	150,000	100,000
B	1,000	2	2,000	75	75,000	100,000
C	1,000	2	2,000	50	50,000	100,000
D	1,000	2	2,000	75	75,000	100,000
			8,000		350,000	400,000

of the company are 8,000. Now, the indirect cost rate per machine hour is as follows:

$$\begin{aligned}\text{Indirect cost rate or overhead rate} &= \frac{750,000}{8,000 \text{ hours}} \\ &= ₹93.75 \text{ per machine hour}\end{aligned}\quad (7.3)$$

The full cost, profitability and margins of Products A, B, C and D with the help of above indirect cost rate of ₹93.75 per machine hour would be as given in Table 7.5.

Table 7.5 shows the total cost, profit and margin percentage of each product when overheads or indirect costs are allocated to products based on machine hours. The profit margin of Product A is 45.31 per cent, the highest among four products, and profit margin of Product C is 6.52 per cent, the lowest among four products. These margins clearly indicate that

Table 7.5: Product Performance When Burden Rate Is Based on Machine Hours

	A	B	C	D
Direct material cost	150	100	50	25
Direct labour cost	100	200	300	400
Total direct cost	250	300	350	425
Indirect cost at the rate of 93.75/ machine hour	187.50	187.50	187.50	187.50
Total cost	437.50	487.50	537.50	612.50
Market prices	800.00	550.00	575.00	750.00
Profit	362.50	62.50	37.50	137.50
Profit margin (%)	45.31	11.36	6.52	18.33
Ranking based on performance	I	III	IV	II



Product A should be emphasized and product C should be given less importance in business planning and operations. These margins based on indirect cost per machine hour are drastically different from the product margins based on indirect cost per direct labour hour. This difference in product performance is purely due to differing costing system.

3. Indirect cost based on direct material quantity, full cost and performance of products: The indirect cost rate based on direct material quantity in this company would be as given in Table 7.6.

The total indirect cost of the company would be sum of total variable indirect cost and total fixed indirect cost. The sum of ₹350,000 and ₹400,000 would be ₹750,000. As the direct material quantity is basis for indirect cost rate, the total quantity of material used by the company is 15,000 kg. Now, the indirect cost rate per kg of material used is as follows:

$$\begin{aligned}\text{Indirect cost rate or overhead rate} &= \frac{750,000}{15,000 \text{ kgs}} \\ &= ₹50 \text{ per kg of direct material quantity} \quad (7.4)\end{aligned}$$

The full cost, profitability and margins of Products A, B, C and D with the help of above indirect cost rate of ₹50 per direct material (kg) would be as shown in Table 7.7.

Table 7.7 shows the total cost, profit and margin percentage of each product when overheads or indirect costs are allocated to products based on quantity of direct material. The profit margin of Product A is 50 per cent, the highest among four products, and profit margin of Product B is negative 27.27 per cent, the lowest among four products. These margins clearly indicate that Product A should be emphasized and Product B should be discontinued as it is a loss-making product. The margin of Product B based on indirect cost per labour hour is



Table 7.6: Computation of Burden Rate Based on Direct Material Quantity

Products	No. of Units	Direct Material per Unit (Kg)	Total Direct Material Quantity (Kg)	Variable Indirect Cost per Unit	Total Variable Indirect Cost	Total Fixed Indirect Cost
A	1,000	3	3,000	150	150,000	100,000
B	1,000	8	8,000	75	75,000	100,000
C	1,000	1	1,000	50	50,000	100,000
D	1,000	3	3,000	75	75,000	100,000
			15,000		350,000	400,000

Table 7.7: Product Performance When Burden
Rate Is Based on Direct Material Quantity

	A	B	C	D
Direct material cost	150	100	50	25
Direct labour cost	100	200	300	400
Total direct cost	250	300	350	425
Indirect cost at the rate of 50/kg of material	150	400	50	150
Total cost	400	700	400	575
Market prices	800	550	575	750
Profit	400	-150	175	175
Margin (%)	50.00	-27.27	30.43	23.33
Ranking based on performance	I	IV	II	III

the highest among all four products. However, the same Product B is loss making when margins are based on indirect cost per unit of raw material used. Once again, it is important to note that such difference in product performance is purely due to differing costing system.

4. Indirect cost based on direct material cost, full cost and performance of products: The indirect cost rate based on direct material cost in this company would be as given in Table 7.8.

The total indirect cost of the company would be sum of total variable indirect cost and total fixed indirect cost. The sum of ₹350,000 and ₹400,000 would be ₹750,000. As the total direct material cost is basis for indirect cost rate, the total direct material cost incurred by the company is ₹325,000. Now, the



Table 7.8: Computation of Burden Rate Based on Direct Material Cost

Products	No. of Units	Direct Material Cost per Unit	Total Direct Material Cost	Variable Indirect Cost per Unit	Total Variable Indirect Cost	Total Fixed Indirect Cost
A	1,000	150	150,000	150	150,000	100,000
B	1,000	100	100,000	75	75,000	100,000
C	1,000	50	50,000	50	50,000	100,000
D	1,000	25	25,000	75	75,000	100,000
			325,000		350,000	400,000

indirect cost rate as a percentage of direct material cost is as follows:

$$\begin{aligned}\text{Indirect cost rate or overhead rate} &= \frac{750,000}{325,000} \times 100 \\ &= 230.77 \text{ per cent of direct material cost} \quad (7.5)\end{aligned}$$

The full cost, profitability and margins of Products A, B, C and D with the help of above indirect cost rate of 230.77 per cent of direct material cost would be as shown in Table 7.9.

Table 7.9 shows the total cost, profit and margin percentage of each product when overheads or indirect costs are allocated to products based on direct material cost. The profit margin of Product D is 35.64 per cent, the highest among four products, and profit margin of Product B is 3.50 per cent, lowest among

Table 7.9: Product Performance When Burden
Rate Is Based on Direct Material Cost

	A	B	C	D
Direct material cost	150	100	50	25
Direct labour cost	100	200	300	400
Total direct cost	250	300	350	425
Indirect cost at the rate of 230.77 per cent of direct material cost	346.15	230.77	115.38	57.69
Total cost	596.15	530.77	465.38	482.69
Market prices	800.00	550.00	575.00	750.00
Profit	203.85	19.23	109.62	267.31
Margin (%)	25.48	3.50	19.06	35.64
Ranking based on performance	II	IV	III	I



four products. These margins clearly indicate that Product D should be emphasized and Product B should be given less importance as its profit margin is the lowest among four products.

5. Indirect cost based on direct labour cost, full cost and performance of products: The indirect cost rate based on direct labour cost in this company would be as given in Table 7.10.

The total indirect cost of the company would be sum of total variable indirect cost and total fixed indirect cost. The sum of ₹350,000 and ₹400,000 would be ₹750,000. As the total direct labour cost is basis for indirect cost rate, the total direct labour cost incurred by the company is ₹1,000,000. Now, the indirect cost rate as a percentage of direct labour cost is as follows:

$$\begin{aligned}\text{Indirect cost rate or overhead rate} &= \frac{750,000}{1,000,000} \times 100 \\ &= 75 \text{ per cent of direct labour cost} \quad (7.6)\end{aligned}$$

The full cost, profitability and margins of Products A, B, C and D with the help of above indirect cost rate of 75 per cent of direct labour cost would be as shown in Table 7.11.

Table 7.11 shows the total cost, profit and profit margin percentage of each product when overheads or indirect costs are allocated to products based on direct labour cost. The profit margin of Product A is 59.38 per cent, the highest among four products, and profit margin of Product C is 0, lowest among four products. These margins clearly indicate that Product A should be emphasized and Product B should be given less importance as its profit margin is zero, the lowest among four products. The margins of Product A based on indirect cost per labour hour is third highest among all four products. However, the same Product B is the most profitable product of the company when indirect cost is allocated based on direct



Table 7.10: Computation of Burden Rate Based on Direct Labour Cost

Products	No. of Units	Direct Labour Cost per Unit	Total Direct Labour Cost	Variable Indirect Cost per Unit	Total Variable Indirect Cost	Total Fixed Indirect Cost
A	1,000	100	100,000	150	150,000	100,000
B	1,000	200	200,000	75	75,000	100,000
C	1,000	300	300,000	50	50,000	100,000
D	1,000	400	400,000	75	75,000	100,000
			1,000,000		350,000	400,000

Table 7.11: Product Performance When Burden Rate Is Based on Direct Labour Cost

	A	B	C	D
Direct material cost	150	100	50	25
Direct labour cost	100	200	300	400
Total direct cost	250	300	350	425
Indirect cost at the rate of 75 per cent of direct material cost	75	150	225	300
Total cost	325	450	575	725
Market prices	800	550	575	750
Profit	475	100	0	25
Profit margin (%)	59.38	18.18	0.00	3.33
Ranking based on performance	I	II	IV	III

labour cost. Thus, differing costing system make differing margins of the products.

6. Indirect cost based on direct total direct cost, full cost and performance of products: The indirect cost rate based on total direct cost in this company would be as shown in Table 7.12.

The total indirect cost of the company would be sum of total variable indirect cost and total fixed indirect cost. The sum of ₹350,000 and ₹400,000 would be ₹750,000. As the total direct cost is basis for indirect cost rate, the total direct cost incurred by the company is ₹1,325,000. Now, the indirect cost rate as a percentage of total direct cost is as follows:

$$\begin{aligned}
 \text{Indirect cost rate or overhead rate} &= \frac{750,000}{1,325,000} \times 100 \\
 &= 56.60 \text{ per cent of total direct cost} \quad (7.7)
 \end{aligned}$$



Table 7.12: Computation of Burden Rate Is Based on Total Direct Cost

Products	No. of Units	Direct Cost per Unit	Total Direct Cost	Variable Indirect Cost per Unit	Total Variable Indirect Cost	Total Fixed Indirect Cost
A	1,000	250	250,000	150	150,000	100,000
B	1,000	300	300,000	75	75,000	100,000
C	1,000	350	350,000	50	50,000	100,000
D	1,000	425	425,000	75	75,000	100,000
			1,325,000		350,000	400,000

The full cost, profitability and margins of products A, B, C and D with the help of above indirect cost rate of 56.60 per cent of total direct cost would be as shown in Table 7.13.

Table 7.13 shows the total cost, profit and margin percentage of each product when overheads or indirect costs are allocated to products based on direct material cost. The profit margin of Product A is 51.06 per cent, the highest among four products, and profit margin of Product C is 4.68 per cent, lowest among four products. These margins clearly indicate that Product A should be emphasized and Product C should be given less importance as its profit margin is the lowest among four products. Thus, the margins of all four products under this method are quite different from margins of the products under previous five different methods.

Table 7.13: Product Performance When Burden
Rate Is Based on Total Direct Cost

	A	B	C	D
Direct material cost	150	100	50	25
Direct labour cost	100	200	300	400
Total direct cost	250	300	350	425
Indirect cost at the rate of 56.60 per cent of direct cost	141.51	169.81	198.11	240.57
Total cost	391.51	469.81	548.11	665.57
Market prices	800.00	550.00	575.00	750.00
Profit	408.49	80.19	26.89	84.43
Margin (%)	51.06	14.58	4.68	11.26
Ranking based on performance	I	II	IV	III



Table 7.14: Product Performance under Multiple Single Burden Rates Based on Traditional Costing System

Basis of Indirect Cost Allocation	A	B	C	D
Direct labour hours (%)	23.02	38.80	26.41	6.75
Machine hours (%)	45.31	11.36	6.52	18.33
Direct material quantity (%)	50.00	-27.27	30.43	23.33
Direct material cost (%)	25.48	3.50	19.06	35.64
Direct labour cost (%)	59.38	18.18	0.00	3.33
Total direct cost (%)	51.06	14.58	4.68	11.26

The product profit margins under six different indirect cost allocations in traditional costing systems are summarized in Table 7.14.

Thus, the product profit margins and performance of products or services are heavily dependent on indirect cost allocation. The ranking of the products based on profit margins differs under varying basis of indirect cost allocation. Product B is the most profitable when indirect costs are allocated based on direct labour hours. However, the same product is least profitable when indirect costs are allocated based on direct material quantity. Similarly, Product D is the least profitable when indirect costs are allocated based on direct labour hours. However, the same Product D is most profitable when indirect costs are allocated based on direct material cost. Therefore, when companies are using traditional costing for computation of full cost, managers should select the appropriate base. However, there is no single appropriate base for allocation of indirect cost



and computation of accurate full cost and product profitability under the traditional costing system. Therefore, the traditional costing system may result in either overcosting or undercosting of certain products leading to ineffective managerial decisions.

ABC SYSTEM

Under the Activity-based costing (ABC) system, indirect costs are allocated to products or services based on indirect activities used for the products. For example, indirect cost of canteen centre of a company could be allocated to multiple product lines based on either number of labourers from each product or labour hours of each product or the indirect cost of the canteen could be allocated to multiple products taking into account number of visits to canteen, items consumed, time spent by employees in the canteen, etc. In the later approach, as the indirect costs of canteen are allocated to products based on activities used by the employees of different products, it is called activity-based costing.

The allocation of indirect cost using traditional costing system and followed by ABC is presented with the help of an example of H-Mart Supermarket at IIMK main gate in Kozhikode. This company has followed traditional costing system to allocate till the year ending March 2019–2020. Its pricing systems based on total cost-plus margin at 5 per cent. The total cost of an order in this store is direct cost plus indirect cost of the order. The direct cost is purchase cost of the goods ordered by the customers. Indirect cost of this store includes cost of processing the goods in warehouse and store, order entry and management, and transportation. Such indirect costs are charged to orders based on direct material cost of each order received from customers. The indirect cost rate is 15 per cent of direct material cost. Table 7.15 illustrates the assignment of direct cost and allocation of indirect cost to the orders based on the traditional costing system, computation of total cost, price, profit and profit margin of one of the orders received by the store from Mr X.



Table 7.15: Costing and Pricing under the
Traditional Costing System

Direct material cost of order from Mr X	100
Indirect cost at the rate of 15 per cent of direct material	15
Total cost	115
Profit at the rate of 5 per cent of total cost	5.75
Price	120.75
Profit margin	4.76

After receiving the order for certain goods from a customer, the staff calculates the cost of goods ordered by the customer which is the direct cost of the order. In this example of order from Mr X, the direct cost of the order is ₹100. Then, the staff allocates indirect cost to the order at 15 per cent of the direct cost which is ₹15. The sum of direct cost and indirect cost would be total cost which is ₹115. Finally, the staff adds profit to total cost at 5 per cent of the total cost. In this example, the profit on this order would be ₹5.75. The sum of total cost and profit would be the selling price of the order. The selling price of this order is ₹120.75. The profit margin, the ratio of profit to price, is 4.76 per cent. This is the practice of H-Mart in pricing any kind of order they receive.

The corporate income statement of H-Mart Supermarket during quarter ending 31 March 2020 is shown in Table 7.16.

The income statement of the supermarket store shows that the firm's operating performance is satisfactory with 12.5 per cent of profit on sales. However, the senior manager of the supermarket is concerned about declining profit margin in the last two or three quarters despite of increase in sales. The senior managers reviewed the quality of service, products and delivery. They found that all is well. However, the managers of the firm



Table 7.16: Income Statement

Income Statement for the Quarter Ending 31 March 2020	
Sales revenue	1,000,000
Material cost	700,000
Indirect cost	175,000
Operating profit	125,000

suspected their internal costing system and customer/order evaluation based on profitability. The managers of the store learned that their competitors are applying the ABC system, a sophisticated system of costing, for pricing their customers.

CUSTOMER EVALUATION BASED ON THE TRADITIONAL COSTING SYSTEM

The managers of H-Mart reviewed the performance of Customer A and Customer B based on pricing, total cost, profit and margin under existing traditional costing system where indirect costs are allocated to customers based on direct material cost. The details of Customers A and B under existing traditional costing system are given in Table 7.17.

The cost of order from Customers A and B are same, and this resulted in same amount of overheads, price and profitability. The cost accounting figures show that both the customers are equally profitable with the profit margin of 4.76 per cent under existing costing system.

CUSTOMER EVALUATION BASED ON THE ABC SYSTEM

The additional information available about Customers A and B is presented in Table 7.18. This information shows that the



Table 7.17: Performance of Customers A and B under Traditional Costing System

Customers' Profitability		
	A	B
Direct material cost	85,000	85,000
Indirect cost at the rate of 15 per cent of direct material	12,750	12,750
Profit	4887.5	4887.5
Price	102,638	102,638
Profit margin (%)	4.76	4.76

order of Customer A is quite different from Customer B. Customer A's order size is smaller, number of line items are higher, number of cartons processed in warehouse are higher and is using more door delivery transport facility as compared to Customer B. It is simple to understand that Customer A is more resource and time-consuming as compared to Customer B although the total order amount from these two customers is

Table 7.18: Operating Information of Customers A and B

Additional Information	Customers	
	A	B
Number of orders placed	10	2
Number of items ordered	200	20
Number of cartons processed in warehouse	100	40
Number of cartons sent by commercial transportation	25	25
Number of cartons sent by door-delivery transport	75	15



same. As the indirect resources required for serving these two customers are significantly different, the costing and pricing of these two customers need to be changed on the basis of activity required to serve these two customers.

Using ABC, H-Mart's burden rates based on multiple activities used by the customers are as follow. The first step in application of ABC starts with identification of indirect major activities for which there would be separate charge. In the case of H-Mart, validation of orders (i.e., recording customer name, address, phone number, etc.), recording each item of the order line by line, pick pack of item of the order in the warehouse and delivery through commercial transportation or door delivery are the five major indirect activities for which the firm would like to charge the customers as presented in Table 7.19.

The second step is ascertainment of the cost of each of these activities identified in Step 1. The total indirect cost of H-Mart as given in Table 7.16 is ₹175,000. Based on additional information available to the managers of H-Mart, this total indirect cost is distributed among the five activities as given in Table 7.19.

The third step in the application of ABC is identification of cost driver of each of the activities. For example, the number of line items is the driver of cost of line-by-line entry. It means increase in number of line items would increase the cost of line-by-line activity. Thus, the firm needs to identify the driver of cost of each activity. The cost drivers of each of the five indirect activities are presented in Table 7.19.

The fourth step is measurement of volume of cost drivers of each activity. For example, the number of line items is the driver of the cost of line-by-line entry. Managers need to measure the actual number of line items in the previous period in H-Mart which is 200,000 items.



Table 7.19: ABC System of H-Mart

S. No.	Activity	Cost Driver	Activity-wise Indirect Cost (₹)	Cost Driver Units	Activity Rates
1.	Validation of orders	No. of orders	5,000	1,000	5/order
2.	Line-by-line entry	No. of items	15,000	200,000	0.075/item
3.	Warehouse processing	No. of cartons processed in warehouse	50,000	2,000	25/carton processed
4.	Commercial transportation	No. of cartons transported	60,000	1,800	33.33/carton transported
5.	Door delivery	No. of cartons delivered at door	45,000	200	225/carton door delivered
			175,000		

The fifth and final step is to ascertain the ABC rates of each activity. For example, the order validation activity rate is ₹5 per order which is the cost of order validation activity divided by cost driver units of this activity. Similarly, the rates of other activities are computed and presented in Table 7.19. These activity rates would be applied in the case of any order to ascertain the accurate cost and pricing of orders received by H-Mart.

ABC-based activity rates, as computed in Table 7.19, would be applied in the case of Customers A and B with the additional information available in Table 7.18 about the details of these two customers. Table 7.20 presents indirect cost, total cost, profit (loss) and margins of Customers A and B based on ABC. Indirect cost of each activity used by Customers A and B is computed by multiplying the activity rates with the volume of driver. For example, the order validation rate is ₹5 per order. The order validation cost of Customer A is ₹50 (i.e., 10 orders multiplied by ₹5) and Customer B is ₹10 (i.e., 2 orders multiplied by ₹5). The cost of other four activities is also computed similarly. The sum of activities' cost of each customer is the indirect cost. As it can be seen in Table 7.20, the indirect cost of Customer A, based on the ABC system, is ₹20,273.25 and the indirect cost of Customer B is only ₹5,219.75. The indirect cost of Customer A is five times higher than Customer B. This is because the orders of Customer A are complex in delivery. However, such complex orders are not recognized in the traditional costing system while allocating indirect cost and both Customers A and B are charged ₹12,750. Under traditional costing, Customer A was undercharged for indirect cost and Customer B was overcharged for indirect cost.

Based on the ABC system, orders of Customer A are loss making and orders of Customer B are much more profitable.



Table 7.20: Performance of Customers A and B
under the ABC System

	A	B
Direct material cost (1)	85,000	85,000
Indirect cost		
Validator or order	50	10
Line-by-line entry	15	1.5
Warehouse processing	2,500	1,000
Commercial transportation	833.25	833.25
Door delivery	16,875	3,375
Total indirect cost (2)	20,273.25	5,219.75
Total cost (1 + 2)	10,5273.3	90,219.75
Price	102,638	102,638
Profit (loss)	(2,636)	12,418
Profit (loss) margin	(2.57)	12.10

The margins on orders of Customers A and B were exactly equal under flawed traditional costing system. However, Customer B is highly profitable and Customer A is making loss under the ABC system. Thus, the ABC system provides accurate cost information based on activities for managerial decision-making.

MANAGERIAL IMPLICATIONS OF ABC INFORMATION

After computation of accurate cost information, the managers should use such accurate cost information based on ABC for maximizing sales as well as the profitability of the company. Now, the profitability of Customers A and B based on traditional costing and ABC is used to understand the



managerial implication for H-Mart store for maximizing its profitability. Under the traditional costing system, Customers A and B were equally profitable. However, Customer A is loss making and Customer B is much more profitable under the ABC system. This change in customer evaluation would result in the following managerial implications:

1. Under the present pricing system, H-Mart is charging indirect costs at 15 per cent of the material cost to all types of customers. In future, the managers of H-Mart need to charge differently based on activities required for different customers. For example, customers placing small orders, more line items and requiring door delivery would be charged more. The customers ordering big size, requirement of a smaller number of cartons and normal transportation would be charged less by H-Mart. Such pricing would maximize the profitability along with sales of the H-Mart store.

2. Currently, as per the traditional costing system, both Customers A and B are equally profitable. However, that is not true under the ABC system which is a sophisticated system. Customer A is loss making and Customer B is highly profitable. Therefore, the managers of H-Mart should emphasize customers like B. The customers' orders with features such as bulk orders, few line items and requiring a smaller number of cartons should be given more preference and sales to such customers should be maximized to maximize the overall profitability of the company.

3. The managers of H-Mart should communicate internally and externally about the change in its pricing. The internal managers should be aware why Customer A type is charged higher and Customer B type is charged lower. At the same time, the customers need to be aware of pricing system of the company while placing the orders.

4. The managers of H-Mart could use ABC information for improving its efficiency in its services. The managers may divide the indirect activities into value-adding and non-value adding activities. Then, value-adding activities could be minimized without diluting the quality of service and non-value adding activities could be avoided. For example, order validation and line-by-line entry are not much value-adding activities. Such activities could be avoided or minimized by introducing online ordering where the customer fills his contact details and items required. The warehouse pick and pack and processing activity is essential for H-Mart. Gradually, H-Mart may plan to cut such activity and minimize the cost of such activity. Thus, ABC information enables in cutting the cost of services and maximizing the sales and profitability of organizations.

IN CONCLUSION

Cost information plays a vital role in managerial decisions related to manufacturing, sales and distribution, performance evaluation, project evaluation, resource allocation, etc. The cost information used in managerial decision-making should be accurate to make better decisions. If the cost system is ineffective and providing inaccurate cost information to the decision-making managers, their decisions are going to be bad. In most of the cases, the traditional or simple cost system provides inaccurate cost information. However, such inaccurate cost information could be ignored when it is irrelevant while decision-making in that organization. However, managers should adopt sophisticated cost system like ABC for accurate cost information and better decision-making based on such accurate cost information.



QUIZ: ANSWER¹ THE FOLLOWING QUESTIONS USING THE GIVEN MULTIPLE CHOICES

1. Cost information is required for _____.
 - a. Pricing the products
 - b. Product performance evaluation
 - c. Cost reduction
 - d. All the above
2. ABC allocates indirect cost with the help of _____.
 - a. Single burden rate
 - b. Two burden rates
 - c. Multiple burden rates
3. The ABC system is needed due to _____.
 - a. Monopoly market
 - b. High competition
 - c. Increased indirect cost
4. _____ provides accurate cost information.
 - a. Traditional costing system
 - b. ABC system
 - c. CVP analysis system
5. The use of traditional costing with single burden rate is more likely to _____.
 - a. Overcost high-volume simple products
 - b. Overcost low-volume complex products
 - c. Overcost high-priced complex products

¹ Answers of quiz

1. d 2. c 3. c 4. b 5. a





ABOUT THE AUTHOR

Rachappa Shette is currently working as an Associate Professor in finance, accounting and control areas at the Indian Institute of Management Kozhikode, Kerala, India. Prior to this, he worked as faculty at the National Institute of Securities Markets (established by Securities and Exchange Board of India), Navi Mumbai, Maharashtra, India, and at the School of Business Management, Narsee Monjee Institute of Management Studies, Mumbai, India. Before this, he was a Lecturer at the University College of Commerce and Business Management, Osmania University, Hyderabad, India. His primary areas of teaching and research include financial reporting, financial statement analysis, earnings management and cost management. He teaches in postgraduate and executive programmes. He has trained middle-level executives and senior executives of more than 20 companies in the last 20 years in the area of accounting. He has published papers in national and international journals and presented papers in various conferences. For further improvement of this book, kindly share your feedback at rachappa.s@iimk.ac.in



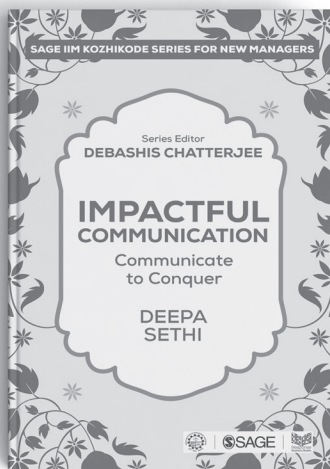
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