Management Accounting and Financial Management

Problems and Solutions

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Preface

The idea of writing this volume was mainly stimulated by our experience as teachers that the intricacies of the concepts and theories in the related areas of management accounting and financial management can be better grasped by the readers from problems–solutions rather than by abstract reasoning. The principal aim of the present book is, therefore, to provide an insight into the main concepts and theories in these growing areas with the help of problems–solutions. The distinguishing feature of this book is the inclusion of a large variety of real-life problems. Some problems have also been taken from the examination papers of several universities, the Institute of Chartered Accountants of India, and the Institute of Cost and Works Accountants of India. Also included are all the exercises given at the end of each chapter in our two books, *Financial Management*, and *Management Accounting* published by Tata McGraw-Hill Publishing Company Limited. This volume is, in a way, *complementary* to them.

We hope the book will be found useful to the advanced students and teachers of the subject, particularly those in commerce, chartered accountancy and cost accountancy. Financial executives as well as those appearing for the Indian Institute of Bankers' and the Civil Services Examinations would also find it a useful reference.

The book is divided into four parts containing 13 chapters in all. Part One entitled Financial Statements and Analysis consists of three chapters. The first chapter (Price Level Adjusted Financial Statements) deals with the preparation of inflation-adjusted financial statements. Chapter 2—Financial Statements Analysis—focusses on using the income statement and the balance sheet for decision-making. The preparation and use of the Statement of Changes in Financial Position is illustrated in Chapter 3.

The five chapters of Part Two (Profit Planning and Cost Control) between them cover the important tools of profit planning and cost control. While Chapter 4 relates to Budgeting, the subject matter of Chapter 5 is Operating and Financial Leverage. Variable costing as a decision-making tool is discussed in Chapter 6. The Cost–Volume–Profit

Relationship and Variance Analysis and Responsibility Accounting as a control device are examined in Chapters 7 and 8 respectively.

Part Three comprises Chapters 9 to 11. Chapter 9 pertains to Capital Budgeting. Capital Structure is the theme of Chapter 10. Dividend Policy is examined in the last chapter (Chapter 11) of this part.

Finally, Part Four dwells on short-term decisions. Included in this part are two chapters. While Chapter 12 describes Pricing and Product Decisions, Chapter 13 examines Resource Decisions in terms of cash, receivables and inventory.

We deem it our duty to record our appreciation and gratitude to the numerous people who have helped us in writing this book in several ways. Mention may be made of Prof. Abad Ahmed, Director, Mr H C Jain, Librarian and Mr P L Kadalbaju, Deputy Registrar, Delhi University, South Campus. Our thanks are also due to our colleagues Prof. R S Nigam, Head, Department of Commerce and Prof. L S Porwal. Mr Mukesh Kumar Gupta deserves our appreciation for the speedy and careful typing of the manuscript. Finally, we would like to specially thank our families without whose support in several ways this book would not have been completed.

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Contents

Part One

FINANCIAL STATEMENTS AND ANALYSIS

This part focusses on the financial statements and their analysis. It consists of three chapters. Chapter 1 addresses itself to the preparation of price level adjusted financial statements to reflect the impact of inflation. Chapter 2 relates to the use of the income statement and the balance sheet for decision-making. The main thrust is on the analysis and interpretation rather than on the computation of the ratios. The last chapter of this part, Chapter 3, illustrates the preparation of the third financial statement, namely, the statement of changes in financial position.

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Price Level Adjusted Financial Statements

The conventional financial statements, prepared on the *premise* of stable purchasing power of monetary unit are unreliable as a measuring rod of company performance in terms of income and financial position because of the declining value of money under the impact of inflation. The main operational limitations from the viewpoint of the effect of price level changes include:

—fixed assets are shown at unreasonably low figures
—inadequate provision for depreciation
—overstatement of profits
—inadequate provision for replacement of assets
—exhaustion of resources
—comparison of figures may be misleading

These weaknesses are essentially because of the historical nature of financial statements. The solution lies in replacing the historical costs by current costs. There are two alternative methods for doing this: (i) There are some in-built techniques in the financial statements which, if applied, would have the effect of introducing current costs. Included in this category are the adjusted *last-in-first-out* (LIFO) method of inventory valuation and the *replacement cost basis* of depreciation; (ii) comprehensive method based on indexing.

According to the adjusted LIFO method, the total profits are bifurcated into (i) operating and (ii) holding which represents the difference between the current value of inventory and its original cost. The merit of the bifurcation is that the holding profit should not be distributed but may be transferred to stock replacement reserve. *The original cost* based method of depreciation leads to over-statement of profits. To remedy the situation, two possible approaches may be adopted: (i) depreciation may be charged on the replacement cost of fixed assets

or (ii) accelerated depreciation methods as a means of matching revenue and current cost may be used.

The methods described above are useful in adjusting price level changes to *specific* items only. The index method represents a comprehensive approach in the sense that it can be used to adjust price level changes to all the items contained in the financial statements. There are two types of indices available: (i) for general price level changes and (ii) for specific price changes. The index based on general prices level changes indicates the changes in the general purchasing power (GPP) and converts the historical value into equivalent current purchasing power (CPP). The price level adjustments made on this basis is commonly referred to as accounting on *CPP basis.* The price level adjustments for the changes in the prices of individual items are specific price adjustments. They are referred to as current cost accounting or accounting on *CCA basis.*

Financial statements based on *CPP* require accounting data to represent the movements in the prices of all things in general as distinct from the movements in the prices of specific items or groups of items. Financial statements based on *CCA* require accounting data to be converted into current specific cost of each item. The rationale is that it is only the movements in prices of those things in which the firm/individual is interested, are relevant. Therefore, adjustment should be carried out by means of specific indices.

The suitability of these methods depends upon the objective/purpose in view. If the purpose is to protect the interest of the shareholders, the general index should be adopted because their interest lies in general purchasing power of the monetary unit. However, if the purpose is to assist the firm in its long-term survival, specific indices should be recommended for adoption.

P.1.1 (i) At the end of the current year, the Laxmi Textiles had cash amounting to Rs. 2,00,000 and inventory Rs. 3,00,000. Both the cash and the inventory were obtained when the price index was 90. The price index at the end of the year was 135. Show how these current assets would be shown in terms of the current purchasing power (CPP) of rupees at the end of 1982?

(ii) At the end of the current year, this company had trade liabilities outstanding amounting to Rs. 2,00,000, arising out of credit purchases of goods when the price index was 100. At what amount will trade liabilities be shown in the balance sheet?

(iii) Determine the amount of monetary gain or loss in situations (i) and (ii) taken together.

Solution

Laxmi Textiles

Particulars	*Unadjusted amount (Rs.)*	*Adjustment factor**	*Adjusted amount (CPP) (Rs.)*
Cash balance (end of year)	2,00,000	135/90	3,00,000
Inventory (end of year)	3,00,000	135/90	4,50,000

In price-level adjusted balance sheet of the company, cash and inventory would be shown at Rs. 3,00,000 and Rs. 4,50,000 respectively.

(ii) Trade liabilities (Rs. 2,00,000 × 135/100)=2,70,000 (end of year)

(iii) *Determination of monetary gain or loss:*

Cash:

Expected balance of cash at the end of year	Rs. 3,00,000
Less actual cash balance	−2,00,000
Monetary loss from holding cash	Rs. 1,00,000

Trade liabilities:

Expected balance of liabilities at the end of the year	Rs. 2,70,000
Less actual amount payable	−2,00,000
Monetary gain from trade liabilities	(Rs.) 70,000
Net monetary loss (Rs. 1,00,000−Rs. 70,000)	30,000

P.1.2 Mr. D of Delhi purchased a large piece of land 10 years ago at a cost of Rs. 3,00,000 in anticipation of substantial increase in land prices. Currently, the land is worth Rs. 30,00,000. The price index which was 100 ten years before is 400.

You are required to adjust the cost of the land to a current price basis by index numbers. Also determine the gain earned by Mr. D during the 10-year period.

Solution

Cost of the land adjusted to current price level $= \frac{\text{Rs. } 3,00,000 \times 400}{100} = \text{Rs. } 12,00,000$

Determination of gain:

Current price of the land	Rs. 30,00,000
Less price level adjusted cost of land	−12,00,000
Net again earned by Mr. D	Rs. 18,00,000

*Adjustment factor $= \frac{\text{Year-end price index}}{\text{Price index at the time of acquiring the asset}}$

P.1.3 (i) Determine price level loss from the following account of Mr. Mukesh (debtor) of the company, assuming accounts are closed on 31st March.

Mukesh

Jan. 1, To balance b/d	Rs. 20,000	March 15, By cash	Rs. 35,000
Fab. 1, To sales	40,000	March 31, By balance c/d	25,000
	Rs. 60,000		Rs. 60,000

April 1 To balance b/d Rs. 25,000

General price index during the quarter indicated the following:

January 1	100
February 1	102
March 15	104
March 31	105

(ii) Determine price level gain from the following account of Mr. Vijay (creditor) of the company, assuming accounts are closed on 31st December.

Vijay

Nov. 30, To cash	Rs. 2,50,000	April 1, By balance b/d	Rs. 80,000
Dec. 31, To balance c/d	50,000	May 1, By credit purchases	2,20,000
	Rs. 3,00,000		Rs. 3,00,000

General price index during these 3 quarter periods indicated the following:

April 1	110
May 1	115
November 30	130
December 31	135

(iii) Bombay head office has its branches at Delhi and Kanpur. The following is a summary of the information relating to plant and equipment of these two branches:

	Delhi	*Kanpur*
Year of purchase	1965	1975
Purchase price	Rs. 1,00,000	Rs. 5,00,000
Estimated life	25 years	20 years
Depreciation method	Straight line	Straight line
Salvage value	Nil	Nil

General price index at the time of the purchase of plant (1st January)	50	200
General price index (current) 31st December, 1982	400	400

You are required to determine the:

(i) The value of plant and equipment in terms of current purchashing power.

(ii) The depreciation figure for the present year based on current values.

(iii) The accumulated depreciation to date at the current value.

(iv) Classify the following items into monetary and non-monetary:

(a) Cash and bank balance
(b) Bank deposits
(c) Inventory
(d) Debtors
(e) Creditors
(f) Provision for taxation
(g) Land
(h) Building
(i) Debentures
(j) Redeemable preferance shares
(k) Equity share capital

Solution

(i) *Determination of monetary loss on Mukesh's account*

	Recorded amount (*Rs.*)	*Adjustment factor*	*Adjusted amount* (*Rs.*)
Beginning balance	20,000	105/100	21,000.00
Plus credit sales	40,000	105/102	41,176.47
Less cash collections	−35,000	105/104	−35,336.54
Expected amount receivable			26,839.93
Less actual amount			−25,000.00
Monetary loss			(1,839.93)

(ii) *Determination of monetary gain from Vijay's account*

Beginning balance	2,50,000	135/110	3,06,818.18
Plus credit purchases	2,20,000	135/115	2,58,260.86
Less payments	−2,50,000	135/130	−2,59,615.38
Expected amount payable			3,05,463.66
Less actual amount			−2,50,000.00
Monetary gain			55,463.66

(iii) (a) *Valuation of plant and equipment (at current purchasing Power)*

	Purchase price (Rs.)	*Adjustment/ conversion factor*	*Adjusted value of the plant (Rs.)*
Delhi	1,00,000	400/50	8,00,000
Kanpur	5,00,000	400/200	10,00,000

(b) and (c) *Accumulated depreciation at current purchasing power:*

	Current purchasing power (CPP) adjusted value of the plant and equipment	*Estimated life of the plant and equipment*	*Depreciation per year (current year also included)*	*Age of the machine (years)*	*Accumulated depreciation to date*
	(Rs.)	*(years)*	*(Rs.)*		*(Rs.)*
Delhi	8,00,000	25	32,000	18	5,76,000
Kanpur	10,00,000	20	50,000	8	4,00,000

(iv) *Monetary items:*

(a) Cash and bank balance
(b) Bank deposits
(d) Debtors
(e) Creditors
(f) Provision for taxation
(h) Debentures
(i) Redeemable preference shares

Non-monetary items:

(c) Inventory
(g) Building
(j) Equity share capital

P. 1.4 The following are the balance sheets of Supreme Plastics Company, prepared on the historical cost basis as on 31st December.

Liabilities:

	Previous Year Amount (Rs.)	*Current Year Amount (Rs.)*
Shareholders' equity	2,10,000	2,40,000
Creditors	72,000	1,62,000
	2,82,000	4,02,000

Assets:		
Fixed assets	1,80,000	1,80,000
Less accumulated depreciation	(60,000)	(66,000)
Stock	—54,000	—1,08,000
Debtors	—60,000	—1,50,000
Cash	—48,000	— 30,000
	2,82,000	4,02,000

The profit and loss statement for the current year is as follows:

Sales		Rs. 2,40 000
Less cost of goods sold	Rs. 2,04,000	
Less depreciation	6,000	—2,10,000
		Rs. 30,000

Summary of the transactions for the year is as follows:

(a) All sales were made on credit basis
(b) Cash received from debtors, Rs. 1,50,000
(c) Credit purchases of goods, Rs. 2,58,000
(d) Cash payments made to suppliers, Rs. 1,68,000
(e) The company adopts the FIFO basis for stock accounting
(f) All transactions may be assumed to have occurred throughout the year at an average price level
(g) Fixed assets were acquired six years ago.

General price indices are as follows:

	Year	
January, 1	70	(six years ago)
December, 31	100	(previous year)
December, 31	140	(current year)

You are required to

(i) recast the balance sheets in terms of current purchasing power
(ii) recast the income statement for the current year in terms of current purchasing power.

Solution

(i) *Balance sheet of previous year expressed in terms of the purchasing power at the end of the current year*:

	Recorded amount (unadjusted) (Rs.)	*Adjustment factor*	*Adjusted amount (Rs.)*
Assets:			
Fixed assets	1,80,000	140/70	3,60,000
Less accumulated depreciation	(60,000)	140/70	(1,20,000)
Stock	54,000	140/100	75,600
Debtors	60,000	140/100	84,000
Cash	48,000	140/100	67,200
	2,82,000		4,66,800
Liabilities:			
Shareholders' equity	2,10,000	140/100	2,94,000
Creditors	72,000	140/100	1,00,800
Monetary gain (balancing figure)	—	—	72,000
	2,82,000		4,66,800

Balance sheet expressed in terms of the current purchasing power at the end of the year:

Assets:			
Fixed assets	1,80,000	140/70	3,60,000
Less accumulated depreciation	(66,000)	140/70	(1,32,000)
Stock (FIFO basis)	1,08,000	140/120	1,26,000
Debtors	1,50,000	140/140	1,50,000
Cash	30,000	140/140	30,000
	4,02,000		5,34,000