

SOME OTHER TITLES OF INTEREST

COLEMAN, B. D.	Money: How to Save it, Spend it, and Make it
GAMBLING, T. E.	A One Year Accounting Course Part 1 Part 2
GREENER, M.	Between the Lines of the Balance Sheet
HALL, S.	Accounting Principles and Practice
HARTLEY, W. C. F.	Introduction to Business Accounting for Managers, 2nd Edition
MENDELSON, M.	The Guide to Franchising
O'LOUGHLIN, C.	National Economic Accounting
SIDEBOTHAM, R.	Accounting for Industrial Management —Introduction to the Theory and Context of Accounting, 2nd Edition
CANDLIN, D. B.	O. & M. A Management Service
DONALD, A. G.	Management Information and Systems

ACCOUNTING FOR PRICE-LEVEL CHANGES— THEORY AND PROCEDURES

by

R. S. GYNTHNER

*B.Com.(Queensland), M.Ec.(Adelaide), A.A.U.Q., F.A.S.A., F.C.A.A.,
A.C.I.S., Head of Department of Accountancy, University of Queensland*



PERGAMON PRESS

OXFORD · NEW YORK · TORONTO

SYDNEY · PARIS · FRANKFURT

U.K.	Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 0BW, England
U.S.A.	Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, New York 10523, U.S.A.
CANADA	Pergamon of Canada Ltd., 75 The East Mall, Toronto, Ontario, Canada
AUSTRALIA	Pergamon Press (Aust.) Pty. Ltd., 19a Boundary Street, Rushcutters Bay, N.S.W. 2011, Australia
FRANCE	Pergamon Press SARL, 24 rue des Ecoles, 75240 Paris, Cedex 05, France
FEDERAL REPUBLIC OF GERMANY	Pergamon Press GmbH, 6242 Kronberg-Taunus, Pferdstasse 1, Federal Republic of Germany

Copyright © 1966 Pergamon Press

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means: electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the publishers

First edition 1966

Reprinted 1975, 1976, 1978

Library of Congress Catalog Card No. 66-16463

*Printed in Great Britain by A. Wheaton & Co. Ltd.,
Exeter*

ISBN 0 08 011711 2

P R E F A C E

THIS book has been written to demonstrate that something *should* be done to incorporate the effects of changing prices into the accounting systems of each firm as a normal part of the regular routine, that correct profit *cannot result* unless this is done, that the matter is not just one of reporting to shareholders, that it *is* physically possible for the effects of changing prices to be injected into the day-to-day recording and reporting procedures, and that one large commercial organization with world-wide ramifications *has* shown for approximately 20 years that this can be done.

An endeavour has been made to write the book in a way that will make its contents of interest to accounting practitioners, accountants in commerce and industry, teachers of accountancy, and students.

After showing that prices have in fact been changing over the years (Chapter 2), the problems of changing prices as they affect accounting are explained (Chapter 3) and demonstrated with the aid of a few simple examples (Chapter 4).

The attitudes of various accounting professional bodies are examined, and it becomes obvious that the official recommendations of the Institute of Chartered Accountants in England and Wales are less progressive (or more conservative) than those of the other bodies included in the discussion in Chapter 5. An examination of the American Institute of Certified Public Accountants' Accounting Research Study No. 6, *Reporting the Financial Effects of Price-level Changes*, is also included in this chapter and it is referred to again throughout the volume in connection with specific problems.

In order to complete the historical picture, a chapter is devoted to a brief summary of the types of proposals that have been put

forward to date concerning the problem of accounting in times of changing prices (Chapter 6).

Two chapters (Chapters 7 and 8) are devoted to an examination of the viewpoint to be adopted when developing a complete theory for the incorporation of current prices into the accounting system. Two main viewpoints or attitudes seem to exist in current writings on this topic, i.e. that of the shareholders and that of the entity itself. In other words, some people tend to try to solve the problems by using some kind of a general index while others advocate the use of several specific indexes reflecting the movements in prices of those things in which the firm is interested. It seems that the attitude adopted depends on whether one tends to look on a firm from without or from within, and this depends on what one's environment has been. As the author's background includes 12 years as a company accountant, secretary and controller, he is an "entity theorist". He believes that the purpose of accounting is to account for the entity primarily, as in our society activities are carried on by entities (firms, corporations, government authorities, etc.).

The two chapters (7 and 8) are two of the most important in the book because the theories behind all the practical procedures developed in later chapters depend on this important matter of indexes.

Chapters 9 and 10 contain practical procedures for accounting for costs of goods sold, inventories, depreciation and non-current assets in times of changing prices—both in the general ledger and in subsidiary records. Chapter 11 deals with the matter of profits and losses on monetary items, and then in Chapter 12 consideration is given to whether the profit (or loss) for the accounting period should be in "average for the period prices" or in "end of period prices". The balance sheet is produced automatically in "end of year prices".

An illustrative example is then given (Chapter 13) in order to piece together the results of the procedures developed in preceding chapters, and miscellaneous matters are discussed in Chapter 14.

The Philips Electrical Industries have developed sophisticated

accounting methods for dealing with changing prices and are far in advance of any other company in this regard. A critical examination of their procedures follows (in Chapter 15), and comparisons are made with the recommendations developed in this volume.

A visit was made to the Australian head office of this worldwide commercial organization in August 1963, and the author's sincere appreciation of the time given to him by their senior finance executives should be mentioned here.

The assistance of Professor R. L. Mathews of the Australian National University and Professor J. McB. Grant of the University of Tasmania, who tendered helpful advice and criticism, after reading an early draft of this book (in the form of a thesis for the University of Adelaide), is greatly appreciated. The help given by colleagues in the Department of Accountancy at the University of Queensland and by post-graduate students, with whom various specific areas were discussed and debated, is also acknowledged. I acknowledge also the publishers and authors who have freely given permission to quote from published works.

Last, but not least, I thank my wife for all the time she devoted to much reading of drafts and proofs.

Brisbane, Australia, 1965

REG S. GYNTHOR

CHAPTER I

INTRODUCTION

THE subject of Accountancy and Changing Price Levels has received increasing attention all over the world in the last 15 years from people with academic, professional, commercial and industrial backgrounds, and also from professional bodies. More and more people have become aware of the problems and implications of changing price levels, and more have considered ways of dealing with their effects in relation to accounting systems and reports.

However, despite this, and despite the fact that price levels have continued to change at varying rates throughout the world, there have been very few attempts to put into practice any of the theories expounded. Accountants, true to their history of conservatism, have hesitated to make any move towards accounting for price-level changes. It would seem that they are waiting for the perfect solution in this difficult field, but it is extremely unlikely that a "perfect" solution exists even in an undiscovered state.

Not so many years ago it was not customary to account for depreciation as there was no way of assuring that it could be assessed with objective certainty. However, logical thought prevailed, and today every business entity accounts for depreciation in some way even though there is no one answer, method or rate that can be applied to each asset of each firm. It is believed that accounting in times of changing price levels is almost a parallel situation and that there is no one perfect solution which can be applied to all firms.

2 Accounting for Price-level Changes—Theory and Procedures

It is believed also that it is the duty of each firm, and hence its accountants, to treat the matter of changing price levels in what is considered to be the most accurate fashion after considering its own environment, its existing facilities, the price-level changes of those things which affect it, and the latest thought of the day in relevant accounting theories and methods. To ignore completely the fact that price levels are changing, merely because of the accounting difficulties involved, appears to be just as unrealistic as the old practice of not accounting for depreciation.

Surely it is better to be approximately correct than to be precisely wrong.

Although increased attention has been given to this subject over the past 15 years, it is not a new topic or problem. In the years that followed the First World War (1914–18) many countries were beset with changing price levels—and some were of fantastic proportions. Then the terrible depression of 1929–33 caused prices in most countries to turn about in a severe fashion. That no lasting accounting theories were developed in these years was probably due to a combination of factors.

No attempt is made here to place these in order of probable magnitude, and the following list is not a complete one. However, these were contributing factors:

The accounting profession was in an embryonic stage.

Accountancy professional bodies were not the strength they are today.

Relatively few recommendations existed—and therefore could not be developed further or altered.

Research work in and out of the universities was in its infancy.

The downturn of prices in the depression upset many of the ideas that were being developed.

The emphasis of those years was on the balance sheet and its values, and not on income determination.

In 1936, however, Henry Whitcombe Sweeney published his now famous book, *Stabilized Accounting*,¹ and many of his ideas are preserved in current theories on accounting for changing price levels. This work stood practically alone until the inflationary spirals that followed the 1939–45 war rekindled the fires

¹Harper & Row, New York, 1936.

of thought in this field. The fact that prices have to this day continued in an upward direction in most countries has given many people time to add their thoughts to this question.

However, in nearly all cases the emphasis has been on ways and means of converting the annual financial statements in order to show the effects of changing price levels. Most theories and methods have been directed to producing more meaningful accounting reports once per year for shareholders. The fact that management needs accurate, meaningful accounting reports on a day-to-day, week-to-week, and month-to-month basis seems to have been overlooked in most cases. To discover, after operating for a year, that results have been nowhere near as good as they should have been and that some corrective action should have been taken is akin to shutting the gate after the horse has bolted.

It is believed that the main purpose of maintaining accounting records is to provide management with vital information to assist it in its day-to-day functions of planning, controlling, and making decisions to increase the performances and efficiency of its entity. It is unfortunate that so many accounting systems seem to be maintained for no purposes other than ascertaining the annual profit figure, preparing annual financial statements, and filing the annual taxation return. When the accounting records are not attuned to assisting management in its efforts to optimize profits, a whole source of potential vital data is wasted.

As accounting information must principally serve the functions of management, it is contended that the effects of changing price levels (whether up or down) must be integrated into the normal accounting procedures if possible, so that the material which is included in the many necessary reports to all levels of management automatically reflects current information in current prices. Only if this is done can accounting data completely fulfil its proper role in the managerial field.

After discussing the problem itself and many aspects of the theoretical approach to this subject, this book attempts to develop ways in which the effects of changing price levels can be integrated

4 Accounting for Price-level Changes—Theory and Procedures

in the accounting records of manufacturers, retailers, and others. However, while the main purpose of maintaining accounting records is to serve all levels of management internally, it does not follow that the type of information developed in the methods recommended will not be suitable for external consumption by shareholders, creditors, investors, and others. It is considered that the kind of information developed here will be of much greater benefit to these outsiders than the data contained in the financial reports now prepared by most companies on conventional lines (i.e. ignoring changing price levels).

In our type of economy, the efficiency with which funds are invested depends a great deal on accounting information. Investors rely on published accounts when investing in firms in various industries, and management relies on internal accounting data when deciding how to invest these funds within each firm.

Therefore accountants also have a social responsibility to produce real meaningful information both internally and externally—and this can only be done if accountants recognize the necessity for incorporating the effects of price-level changes within their accounting systems.

Paton and Littleton emphasized the social responsibility of accountants, too, and their words which follow are well worth repeating.²

Capital should flow into those industries which serve the public interest, and within an industry into those enterprises in which the management is capable of using capital effectively. If capital in an enterprise is earning a return over a considerable period, this probably indicates that the capital is being capably employed in an industry serving an existing demand; if the capital is not earning a return over a period of time, this probably indicates that capital is lodged in incapable hands or in an industry whose service is not in continuing demand. The social importance of accounting therefore is clear, especially in relation to the income statement, since dependable information about earning power can be an important aid to the flow of capital into capable hands and away from unneeded industries.

²Paton, W. A. and Littleton, A. C., *An Introduction to Corporate Accounting Standards* (American Accounting Association, 1940), p. 3.

CHAPTER 2

PRICE-LEVEL STATISTICS

BEFORE proceeding with an explanation of the problem and the development of the theories to be used, it should first be established that prices have been changing and that the problem is a real one.

The Consumer Price Index prepared by the Australian Commonwealth Bureau of Census and Statistics gives an idea of pattern in Australia since 1948-9.¹ (See Table 1, page 6.)

Although a number of indexes that "differ in scope" have been linked, Table 2 (page 7) gives a broader indication of the long-term trend of price levels in Australia.

In case it is thought that the problem is a local one, Table 3 (page 8) permits comparisons of recent price-level movements in a selection of countries. It will be noticed that the situation in the South Americas is one of severe inflation, and it is in this part of the world that the application of accounting methods to reflect the effects of changing price levels might be most needed today.

However, modern welfare economics, together with the allied political needs for near full employment, have produced a state of creeping inflation in most countries, and this too is reflected in Table 3. The point is that price levels have changed in most places over the years and it is believed that they will continue to do so.

It is unrealistic to ignore this from an accounting viewpoint.

¹Extracted from Circular S.B. 472 dated 20 July 1964, Commonwealth Bureau of Census and Statistics.

TABLE 1.
CONSUMER PRICE INDEX
ALL GROUPS—SIX CAPITAL CITIES, SEPARATELY AND COMBINED
(Base of index for each city and for six capitals: year 1952-3 = 100)

Period	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six capital cities
Year ended June							
1949	60.5	61.0	62.1	61.6	60.6	60.7	60.9
1950	65.6	66.2	67.1	66.2	66.2	64.7	66.0
1951	74.5	74.6	75.1	74.7	74.4	73.3	74.6
1952	91.9	91.0	91.8	91.4	90.4	90.4	91.4
1953	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1954	101.6	102.0	102.0	102.3	103.0	105.0	102.0
1955	102.3	102.0	102.9	103.5	105.2	104.9	102.6
1956	105.7	108.1	106.3	106.9	107.9	110.2	106.9
1957	112.9	114.0	112.0	111.1	112.9	116.9	113.1
1958	114.5	114.4	114.4	111.9	113.6	117.0	114.2
1959	115.3	116.6	118.2	114.5	114.7	118.7	116.0
1960	117.8	120.0	121.2	118.0	116.9	120.8	118.9
1961	122.1	125.9	125.4	122.9	121.2	127.5	123.8
1962	122.6	126.3	127.3	122.5	121.6	128.1	124.3
1963	123.2	126.2	127.7	122.1	122.2	128.0	124.5
1964	124.5	127.1	129.0	123.5	123.8	129.4	125.7

TABLE 2.
COMPARISON—AUSTRALIAN RETAIL PRICE AND WHOLESALE
PRICE INDEX NUMBERS²

Year	Retail price*	Wholesale price†	Year	Retail price*	Wholesale price†
1901	88		1932	138	140
1902	93		1933	133	135
1903	91		1934	136	135
1904	86		1935	138	139
1905	90		1936	141	144
1906	90		1937	145	154
1907	90		1938	149	152
1908	95		1939	153	150
1909	95		1940	159	167
1910	97		1941	167	179
1911	100		1942	181	199
1912	110		1943	188	210
1913	110		1944	187	212
1914	114		1945	187	215
1915	130		1946	190	215
1916	132		1947	198	227
1917	141		1948	218	259
1918	150		1949	240	287
1919	170		1950	262	337
1920	193		1951	313	414
1921	168		1952	367	476
1922	162		1953	383	486
1923	166		1954	386	481
1924	164		1955	394	498
1925	165		1956	419	516
1926	168		1957	429	519
1927	166		1958	435	508
1928	167	167	1959	443	514
1929	171	172	1960	459	546
1930	162	159	1961	471	524
1931	145	145			

*Six capital cities combined.

†Basic materials and foodstuffs, both imported and home produced.

²Commonwealth Bureau of Census and Statistics, *Labour Report, 1961* (published October 1963), pp. 36 and 41 (wholesale price figures adapted for comparison).

TABLE 3.
INDEX NUMBER OF CONSUMER (RETAIL) PRICES IN VARIOUS COUNTRIES^a
(Base: 1953 = 100)

Period	Argentina (Buenos Aires)	Australia	Belgium	Brazil (Sao Paulo)	Canada	France (Paris)	Germany (Western)	India	Indonesia (Jakarta)	Ireland	Italy	Japan	Netherlands	New Zealand	Norway	Pakistan (Karachi)	Philippines (Manila)	South Africa	Sweden	Switzerland	United Kingdom	United States of America
1952	96	99	100	82	101	101	102	97	—	95	98	94	100	96	98	90	104	97	99	101	97	99
1953	100	100	100	100	100	100	100	100	—	100	100	100	100	100	100	100	100	100	100	100	100	100
1954	104	101	101	118	101	100	100	95	—	100	103	106	104	105	104	98	99	102	101	101	102	100
1955	117	103	101	142	101	101	102	90	—	103	105	105	106	107	105	94	98	105	104	102	106	100
1956	132	109	104	173	102	103	104	99	—	107	109	106	108	111	109	97	100	107	109	103	112	102
1957	165	112	107	206	106	106	107	104	—	112	110	109	115	113	112	106	102	110	113	105	116	105
1958	217	113	108	237	108	108	121	109	—	116	113	109	117	118	118	110	105	114	119	107	119	108
1959	464	116	110	326	110	129	110	114	100	116	113	110	119	123	120	106	104	115	120	106	120	109
1960	590	120	110	439	111	134	111	116	135	117	115	114	121	124	121	113	109	117	124	108	121	111
1961	670	123	111	607	112	138	114	118	167	120	118	120	123	126	124	115	110	119	128	110	125	112

^aStatistical Office of the United Nations, *Monthly Bulletin of Statistics*.

CHAPTER 3

AN EXPLANATION OF THE PROBLEM

THE indexes in the previous chapter prove beyond doubt that prices have been changing for many years—and have been rising at a strong rate in Australia since 1946. This situation is typical of that in most countries.

Despite this, accountants over the years have adhered strictly to their Monetary and Historical Record Conventions and have merely recorded all transactions in the money terms applying at the date of the actual transactions, irrespective of any subsequent movements in price levels. A typical textbook description of the Historical Record Convention runs as follows:

According to this convention the monetary values used in accounting should be derived only from actual events. Assets and services acquired by an accounting entity are recorded at their actual cost and liabilities are recorded for the amounts at which they have been incurred.¹

That this convention was developed in the periods of more constant prices in the middle and late 1930's has been ignored, and the following statements of that era are still used in defence of these actions:

Accounting is not essentially a process of valuation, but the allocation of historical costs and revenues to the current and succeeding fiscal periods.²

Inventories and plant are not "values" but cost accumulations in suspense, as it were, awaiting their destiny.³

¹Yorston, R. K., Smyth, E. B. and Brown, S. R., *Accounting Fundamentals* (Law Book Co. of Australasia Pty. Ltd., Sydney, 1963), p. 10.

²American Accounting Association's "Tentative Statement of Accounting Principles Affecting Corporate Reports", *Accounting Review*, June 1936, p. 188.

³Paton, W. A. and Littleton, A. C., *op. cit.*, p. 14.

10 Accounting for Price-level Changes—Theory and Procedures

This second statement has been turned into the more common, “The balance sheet is the connecting link which joins two successive revenue statements—the bridge over which may be carried many unabsorbed costs which are to be allocated against the revenues of succeeding periods.”⁴

This adherence to the Historical Record Convention has been caused mainly by an endeavour to adhere strictly to what is termed “objectivity”, the majority feeling being that “recorded costs are objectively determined data and that estimated current values are largely matters of opinion”.⁵

The adherence to “objectivity” has continued despite the many warnings that have been given in the literature over the past 15 years. Although it did not propose any constructive alternative to conventional accounting methods, the Council of the Institute of Chartered Accountants in England and Wales in 1952 included the following in an official announcement in recognition of the problem:

The Council cannot emphasize too strongly that the significance of accounts prepared on the basis of historical cost is subject to limitations, not the least of which, is that the monetary unit in which the accounts are prepared is not a stable unit of measurement. In consequence, the results shown by accounts prepared on the basis of historical cost are not a measure of increase or decrease in wealth in terms of purchasing power; nor do the results necessarily represent the amount which can prudently be regarded as available for distribution, having regard to the financial requirements of the business. Similarly, the results shown by such accounts are not necessarily suitable for purposes such as price fixing, wage negotiations and taxation. . . .

One might be excused for asking “What then are they good for?” Without any accompanying constructive suggestions or recommendations, the warning in the above statement seemed to be soon forgotten by most.

⁴Yorston, R. K., Smyth, E. B. and Brown, S. R., *Advanced Accounting* (vol. 2) (Law Book Company, 1959), p. 478. It could be argued that this is a rationalization of what in fact is done.

⁵Paton, W. A. and Littleton, A. C., *op. cit.*, p. 125.

⁶Paragraph 28 of Recommendation 15 issued on 30 May 1952.

The following extract from *Reporting the Financial Effects of Price-level Changes* (Accounting Research Study No. 6) explains the problem from a different angle:

This means that the dollar, as a measuring device, is unstable or elastic. In terms of its command over goods and services, it represents something different at each point of time. It is proper, therefore, to distinguish between the 1940 dollar, the 1950 dollar, and the 1960 dollar, and so on, in that each one represents a different amount of general purchasing power, different quantities of goods and services. These dollars at different dates are no more comparable than if each one were a different foreign monetary unit. If the change is material, the dollar at two points of time cannot for most purposes, be added, subtracted, or otherwise compared with any expectation of getting meaningful or useful results.⁷

It has also been pointed out, that accountants who are so meticulous in their conversions of dollars to pounds when preparing consolidated statements have no hesitation in adding each firm's 1952 pounds to 1962 pounds, even though these pounds have vastly different values.

Many accountants have believed that they have been acting in a conservative fashion by ignoring the rising prices for balance-sheet purposes, when all the time they have been anything but conservative by overstating profits. "It happens that some accountants report profits even when the firm's position is worse in fact than it was at the beginning of the period."⁸

A rise in the value of our plant consequent on a general rise in prices, and accompanied by a corresponding rise in the sales value of our product, results, no doubt, in an accretion to capital measured in money terms; but it cannot in itself result in an increased real profit from production. The receipt of higher values from sales is matched by the *sacrifice* of higher values in wear and tear of plant. The absolute profit, in money terms, will, of course, be bigger, since if, say, prices double all round, the gap between sales and current costs will also have doubled. It is because depreciation based on original cost will show profits to have more than doubled (since sales will have doubled and depreciation will have remained unchanged) that it misleads.⁹

⁷American Institute of Certified Public Accountants, 1963, p. 23.

⁸Riverin, A., "Accounting Profit: Myth or Reality?", *Cost and Management*, October 1961, p. 415.

⁹Solomons, D., *Accountants' Journal*, October 1948.

12 Accounting for Price-level Changes—Theory and Procedures

Professor Solomons here clearly shows how profits can be overstated through understating depreciation in times of rising prices; but the problem is not limited to depreciation. The understating of depreciation is the most obvious error to detect because fixed assets tend to be kept for a number of years during which time there can be many changes in price levels. It was only natural, therefore, that it was to the depreciation area that writers first directed attention.

However, the overstatement of profits in times of rising prices (and the understatement of profits in times of falling prices) will occur if *any* input costs of one date are matched with output revenues of a later date. For profit-determination purposes there must be a matching of revenues (automatically in current prices) with the *current* costs of the assets used up in producing those revenues; and the assets used up include the costs of goods sold.

According to the Historical Record Convention

which requires the original cost to be charged to a period, certain expenses are in the monetary unit of the current period while others, such as depreciation, and to a certain extent, the cost of goods sold, are expressed in the operating account in monetary units which do not have the same purchasing power. It is just as inconceivable to add monetary units of different value as it is to add oranges and wood pulp.¹⁰

In Accounting Research Study No. 6 we find these words:

Depreciation is usually the most drastically affected item on the operating statement, since it typically reflects the value of the dollar at many different points of time, depending upon when the various depreciable assets were acquired. Cost of goods sold will be affected in similar fashion but to a lesser degree because the turnover period of inventories is shorter than that of plant and equipment.¹¹

Whilst this might be so during periods of relative stability and in some highly capitalized industries, Professors Mathews and Grant have shown that the effect on cost of goods sold can be and has been more significant in many cases. Their empirical

¹⁰Riverin, A., *op. cit.*, p. 422.

¹¹*Reporting the Financial Effects of Price-level Changes*, p. 24.

work in this connection is reported in their book *Inflation and Company Finance*.¹²

Professor Paton had both depreciation *and* costs of goods sold in mind when he wrote:

It is fairly obvious that any business which fails to sell its product for a sufficient number of dollars to recoup the purchasing power invested and consumed in the particular period in the process of production, is operating unsuccessfully, and any accounting report which shows a condition to the contrary is basically invalid.¹³

However, there is a third factor, affecting the compilation of accounting profit, which is overlooked by conventional accounting and its Historical Record Convention. This is the matter of monetary assets and liabilities. Many people have confined their thinking to the depreciation of physical capital assets and to the costs of stocks sold. It is said that items such as cash, debtors, and creditors do not need adjusting for balance-sheet purposes because at balance date they will be in current terms automatically.

This in itself is quite correct, but the existence of these items *during* a period of changing price levels must be kept in mind when attempting to arrive at the profit figure for the period.

The only real way to lose money when prices are rising is to hold monetary assets while this is happening. Therefore, a firm which minimizes its monetary working capital during such times is better off (all else being equal) than one which does not. These facts should be taken into account too, when attempting to arrive at correct profit determination.

Professor Hendriksen expresses this line of thinking in the following words:

The impact of price changes on nonmonetary accounts and net income should not be presented without also presenting the effect of holding monetary assets and liabilities . . . If monetary assets are held during a period of price increase, the owners will experience purchasing-power losses; monetary liabilities held during such periods result in purchasing-power gains . . . These gains and losses from the holding of monetary

¹²Law Book Co. of Australasia Pty. Ltd., Sydney, 1958, 179 pp.

¹³Paton, W. A., *Journal of Accountancy*, October 1959, p. 38.

14 Accounting for Price-level Changes—Theory and Procedures

assets and monetary *current* liabilities should be included in the computation of net income to the enterprise. This represents an important part in the ability of the firm to maintain the purchasing power of its investment.¹⁴

Conventional accounting in historic costs in accordance with the traditional Historical Record Convention merely protects the *money* capital and not the purchasing-power units in the original capital. If only the original money capital is maintained in the profit-determination process, when prices are rising, borrowing might have to take place to maintain the same volume of assets and the same volume of business. This has happened a lot in practice. It should not be left to business finance policies to take care of this danger. "Is it sound accounting practice to report that capital investment has been maintained intact *and a profit earned*, when, in fact, only the number of dollars of investment is unimpaired, while the economic power of those dollars has been constantly shrinking?"¹⁵

Professor Perry Mason summarized the problem very well:

In brief, then, without adjustment of the figures, the income statement suffers from price-level changes by the lack of comparability of the accounting figures, from the failure of depreciation and similar costs to reflect the current price level and therefore to be comparable with the current revenue figures, and from the resulting diminished significance of the reported net income. The balance sheet also suffers from lack of comparability of the various items. Cash and receivables and the unpaid liabilities are expressed in current dollars, but the inventories and especially the plant and equipment are collections of non-comparable items since they are almost always a hodge-podge of various past-period dollars representing different amounts of purchasing power over commodities and services. The purchasing-power gains and losses on the net monetary position are undisclosed. Stockholders and other investors are not provided with information which enables them to interpret the operating results and to judge the relative effect of price-level changes upon a particular enterprise.¹⁶

¹⁴Hendriksen, E. S., *Price-level Adjustments of Financial Statements—An Evaluation and Case Study of Two Public Utility Firms* (Washington State University Press, 1961), pp. 15, 16 and 19. (Emphasis added.)

¹⁵Graham, W., *Accounting Review*, July 1959, p. 367.

¹⁶Mason, P., *Price-level Changes and Financial Statements—Basic Concepts and Methods* (American Accounting Association, 1956), p. 11.

It is very unfortunate that these facts are not known to the majority of users of accounting statements. The fact that an auditor's certificate is appended to the foot of a balance sheet is sufficient for most to presume that the positions revealed are expressed in current currency. Most managers do not have a background in accounting and therefore they, too, assume similarly when perusing and acting on the many reports presented to them throughout each year.

Under conventional accounting no user can possibly know what the significance of reported income or assets is, for both are represented in mixed units having no common significance. It is not unreasonable to suppose, though this is only supposition, that readers of accounting statements now assume that the significance of the units is the present significance of money units; at least accountants enter no caveat in this respect; and if the supposition is valid even in respect of some users they are being seriously misled, particularly if they engage in comparisons of the results and positions of different corporations.¹⁷

¹⁷Chambers, R. J., *Measurement in Accounting* (University of Sydney, January 1963), p. 33 (unpublished monograph).

CHAPTER 4

SOME EXAMPLES OF THE PROBLEM

IN THE preceding chapter an attempt was made to describe the problems that have been created in accounting records and financial reports by the adherence to the traditional Historical Record Convention. A few, brief, simple examples are now given in order to demonstrate further or more clearly some kinds of problems that are created by what has been conventional accounting.

Full explanations will not be given for the strange results in each case, nor will any attempt be made at this stage to provide better alternate methods of accounting. This will follow later.

Example 1. A taxi is purchased for \$1000 and has an estimated life of 5 years. For each of the 5 years it is assumed that revenues exceed cash expenses by \$400, and after deducting depreciation of \$200, an annual conventional accounting profit of \$200 remains in each year. Five years later the taxi is scrapped (no salvage value) and the balance sheet reads:

Capital	\$1000	Cash	\$2000
Profit (undistributed)	\$1000		
	<u>2000</u>		<u>2000</u>

Price levels have been rising during these 5 years and it takes the whole cash balance of \$2000 to buy an identical taxi—and let us assume there are no technological improvements in order to keep the example simple.

We started the 5-year period with a taxi and no cash, and we ended the period with an identical taxi and no cash.

Surely it is not correct to show a profit of \$1000 in the balance sheet! Depreciation has been under-charged in each year and on the surface it seems that an unrecorded loss has been incurred in holding cash during this period.

Example 2. Now assume that at the beginning of a period the balance sheet of another company was:

Capital	\$4000	Freehold land	\$2000
		Stock, 1000 items @ \$2	\$2000
	<u>\$4000</u>		<u>\$4000</u>

The stock is held for a while and then sold for \$4000. Sundry expenses are \$1000. However, the purchase cost price of these stock items has been rising steadily and the current cost price at the time of the sale was \$2.50 each. One thousand stock items are purchased and put back on the shelves at this price of \$2.50, i.e. out of the proceeds of \$4000. The position according to conventional accounting then is:

Capital	\$4000	Freehold land	\$2000
Profit	\$1000	Stock 1000 items @ \$2.50	\$2500
		Cash	\$500
	<u>\$5000</u>		<u>\$5000</u>

Note: Profit here = \$4000 - (\$2000 + \$1000).

The period commenced with the freehold land and 1000 stock items and at the end of the period was in the same position plus \$500 in cash. That is, the firm is better off by \$500 cash.

Should not the profit figure therefore be only \$500 and not \$1000? In this case the cost of the sale was under-charged by adhering to the original historical costs.

Example 3. A company starts off the period with a capital of \$10,000, all of which is invested in 6% debentures as the time is not yet ripe for the company to proceed with its intended operations. Conventional accounting will show a profit of \$600 (interest) at the end of the period whether price levels in the

18 Accounting for Price-level Changes—Theory and Procedures

company's intended field remain constant, rise, or fall. If price levels did in fact rise by 20% during the year, would it be correct to still show a profit of \$600? Assuming that the debentures can still be sold for their face value, should not a loss of \$1400 be shown? (That is, the \$2000 loss in purchasing power minus the \$600 interest received.)

Here the calculation of the loss on holding monetary items during a period of rising prices is necessary before the true position can be seen.

Example 4. A company is formed to buy and rent freehold land. It buys one piece for \$10,000 and then prices commence to rise. It buys a similar piece for \$12,000 after 3 years and then another similar piece for \$18,000 after 5 more years. The conventional balance sheet then shows

Capital	<u>\$40,000</u>	Freehold land	<u>\$40,000</u>
---------	-----------------	---------------	-----------------

This merely shows the summation of dollars of differing values paid out for land over an 8-year period. The total really means nothing to the shareholders as the current value of the land is \$54,000 and the real value of their investment is \$54,000.

If annual net rentals are \$3000 the shareholders are probably being misled into thinking that the earning rate is 7.5% ($\$3000/\$40,000$) when the real rate of return is only 5.5% ($\$3000/\$54,000$). A clearer picture of the situation would have been obtained if the value of the land had been written up in the accounting system each year, i.e. by using a revaluation reserve account.

In the examples above, rather steep rises (by our standards) in the price levels have been pictured in order to make the points more clear. This could give the impression that conventional accounting is faulty only in those times when prices might rise substantially during an accounting period. The following extract from the 1961 Annual Report of the Reece Corporation (U.S.) should correct that impression.

1961 was a year of relative price stability during which the Consumer's Price Index rose 1.1%. On figures adjusted for Price Level changes, even a moderate rise in prices within a year has some effect on inventory valuation, which is reflected in cost of sales. Coupled with past periods of ever increasing prices, the effect on required depreciation charges is substantial. . . . In 1961, the Company's unconsolidated net profit was \$93,000 greater when expressed by conventional means than in Uniform Dollars.

In 1960 the same index rose by only 1.6% and the Reece Corporation's Annual Report for that year includes these words:

The Reece Corporation (unconsolidated) shows net profit of \$1,002,000 for 1960; but after adjustments for price level changes net profit expressed in 1960 Uniform Dollars is \$906,000.

The difference in that year was \$96,000.

All of the above examples (together with the previous discussion) have been designed to reveal the problems created by conventional accounting and its adherence to the Historical Record Convention, and to show that some adjusting accounting entries are required to account for the effects of price-level changes. The variety of examples above and the previous discussion show that adjustments are needed as regards all of

- (a) depreciation charges,
- (b) cost of sales charges,
- (c) profits and losses on monetary items, and
- (d) balance-sheet valuations.

Partial adjustments for one, or some, but not all of the above would bring about an incomplete result. This viewpoint seems to be confirmed by Accounting Research Study No. 6 from which this is an extract:

The most common partial adjustment of the financial statements is the restatement of depreciation, sometimes associated with a restatement of the related asset costs and the accumulated depreciation. The restriction of the partial adjustment to depreciation is an incomplete indication of the effect of inflation or deflation upon the net profit. In addition to depreciation, the cost of materials used or of goods sold is usually affected significantly. Also, the loss or gain on monetary items should be disclosed separately as a distinctive feature of price-level adjustments. In many cases it is true that depreciation would involve the largest adjustment, but at least these three adjusted items should

20 *Accounting for Price-level Changes—Theory and Procedures*

appear when any attempt is made to revise the net earnings so as to reflect the change in the price level. Even then, the adjusted net profit figure will have its usefulness restricted unless the balance-sheet accounts are also restated. For example, a meaningful rate of return cannot be computed by comparing the adjusted net profit with the unadjusted or partially adjusted stockholders' equity.¹

¹*Reporting the Financial Effects of Price-level Changes*, pp. 54–55.

CHAPTER 5

STATEMENTS BY PROFESSIONAL BODIES

SEEING that more and more people have been discussing and writing about the inefficiencies of conventional accounting and its Historical Record Convention since the Second World War (and quite rightly so too), anyone on the sidelines would assume that the professional bodies would have immediately done everything in their power to make constructive recommendations to their members to correct the situation.

Just what have the various professional bodies done about this matter of price-level changes?

The Institute of Chartered Accountants in England and Wales

The official recommendations of this Institute are usually adopted by the Institute of Chartered Accountants in Australia. Recommendations by either of these bodies are the only ones available to Australian accountants.

Way back in 1952 (on 30 May of that year) the English Institute issued its Recommendation 15 on this subject of changing price levels, and this has not been added to or changed since that date!

Paragraphs 30 and 31 of this Recommendation 15 read as follows:

30. Unless and until a practicable and generally acceptable alternative is available, the Council recommends that the accounting principles set out below should continue to be applied:

- (a) historical cost should continue to be the basis on which annual accounts should be prepared and, in consequence, the basis on which profits shown by such accounts are computed

22 Accounting for Price-level Changes—Theory and Procedures

- (b) any amount set aside out of profits in recognition of the effects which changes in the purchasing power of money have had on the affairs of the business (including any amount to finance the increase in the cost of replacements, whether of fixed or current assets) should be treated as a transfer to reserve and not as a charge in arriving at profits. If such a transfer is shown in the profit and loss account as a deduction in arriving at the balance for the year, that balance should be described appropriately, since it is not the whole of the profits
- (c) in order to emphasize that as a matter of prudence the amount so set aside is, for the time being, regarded by directors as not available for distribution, it should normally be treated as a capital reserve
- (d) for balance sheet purposes fixed assets should not (except in special circumstances, such as those referred to in paragraph 12) be written-up, especially in the absence of monetary stability.

31. The Council also recommends to members who are directors or officers of companies or who are asked by clients for advice, that they should stress the limitations on the significance of profits computed on the basis of historical cost in periods of material changes in the purchasing power of money; and that they should draw attention to the desirability of:

- (a) setting amounts aside from profits to reserve in recognition of the effects which changes in the purchasing power of money have had upon the affairs of the business, particularly their effect on the amount of profit which, as a matter of policy, can prudently be regarded as available for distribution
- (b) showing in the directors' report or otherwise the effects which changes in the purchasing power of money have had on the affairs of the business, including in particular the financial requirements for its maintenance and the directors' policy for meeting those requirements, either by setting aside to reserve or by raising new capital
- (c) experimenting with methods of measuring the effects of changes in the purchasing power of money on profits and on financial requirements. If the results of such experiments are published as part of the documents accompanying the annual accounts, the basis used for the calculations and the significance of the figures in relation to the business concerned should be stated clearly.

On p. 1 of this book it was stated that it seemed as if most accountants were waiting for the non-existent perfect solution to this problem. The opening sentence of the Chartered Institute's paragraph 30 above shows that this is its attitude. The contents of these paragraphs seem to contain a contradiction. Whilst it is realized that conventional profit is not really profit, it is recommended that it still be called "profit". The adjustments or

transfers to reserves necessary to preserve the purchasing power of the business are not to be a charge in arriving at "profits"!

The American Institute of Certified Public Accountants

On 27 May 1947 the Secretary of this Institute wrote to the Rockefeller Foundation requesting a grant to assist in a 3-year project to make a survey and a historical study of the uses of the word "income". In 1952 the Report of this Study Group on Business Income was published and the following are extracts from its "Summary and Conclusions".¹

10. . . . It would seem that in the longer view methods could, and should, be developed whereby the framework of accounting would be expanded so that the results of activities, measured in units of equal purchasing power, and the effects of changes in value of the monetary unit would be reflected separately in an integrated presentation which would also produce statements of financial position more broadly meaningful than the orthodox balance sheet today. It is believed that statements of business income in which revenues and charges against revenue would be stated in units of substantially the same purchasing power would be significant and useful for many of the purposes for which income determinations are commonly used, if not also in reports upon stewardship.

11. The problem of presenting both the most generally useful income determination and a fully significant statement of financial position would doubtless present difficulties, but probably none which the highly developed accounting techniques of today could not solve.

12. For the present, it may well be that the primary statements of income should continue to be made on bases now commonly accepted. But corporations whose ownership is widely distributed should be encouraged to furnish information that will facilitate the determination of income measured in units of approximately equal purchasing power, and to provide such information wherever it is practicable to do so as part of the material upon which the independent accountant expresses his opinion.

However, a year later, the same Institute's Committee on Accounting Procedure showed, by a majority decision, that it did not accept these ideas of its Study Group, and it reaffirmed a 1947 opinion by including the following in its Accounting Research Bulletin No. 43:

¹*Changing Concepts of Business Income* (Macmillan, New York, 1952), p.105.

24 Accounting for Price-level Changes—Theory and Procedures

16. The immediate problem can and should be met by financial management. The committee recognizes that the common forms of financial statements may permit misunderstanding as to the amount which a corporation has available for distribution in the form of dividends, higher wages, or lower prices for the company's products. When prices have risen appreciably since original investments in plant and facilities were made, a substantial proportion of net income as currently reported must be reinvested in the business in order to maintain assets at the same level of productivity at the end of a year as at the beginning.

17. Stockholders, employees, and the general public should be informed that a business must be able to retain out of profits amounts sufficient to replace productive facilities at current prices if it is to stay in business. The committee therefore gives its full support to the use of supplementary financial schedules, explanations or footnotes by which management may explain the need for retention of earnings.²

However, this was not a unanimous opinion and the six dissenting committee members stated:

Those dissenting believe that acceptable accounting practices should comprehend financial statements to stockholders, employees, and the public designed to reflect those concepts of cost and net income which are recommended in paragraph 5, to management in determining product costs, prices, and business policies. They question whether net income can properly be so designated if *appropriations therefrom*, as suggested in paragraph 6, are needed to preserve capital invested in plant.³

That is, they wanted to see the adjustments made *before* arriving at net profit—and not *after*.

So it can be seen that the *official* recommendations of the American Institute of Certified Public Accountants date back to 1953, and that they are very similar in most respects to those of the Institute of Chartered Accountants in England and Wales.

However, in view of "the fact that the profession has so many unsolved problems of major importance",⁴ the American Institute of Certified Public Accountants in 1958 set up its Accounting Principles Board and its Research Division. The Research Division is responsible for conducting research assigned to it by the Accounting Principles Board, and it has the authority to

²*Restatement and Revision of Accounting Research Bulletins* (American Institute of Certified Public Accountants, New York, 1953), p. 69.

³*Ibid.*, p. 70.

⁴Queenan, J. W., *Journal of Accountancy*, August 1962, p. 29.

publish its findings and conclusions in the form of research studies even though these have not been approved or adopted by the Institute itself or by the Accounting Principles Board. The idea is that the research study reports will stimulate constructive criticism and that this will be considered fully before any official recommendations on any matter are issued on behalf of the Institute.

Accounting Research Study No. 1⁵ was published in 1961 and a paragraph on p. 46 reads:

The evidence of the instability of the monetary unit in recent decades is overwhelming; the probability that the instability will prevail into the foreseeable future is high. Accountants should move quickly therefore to implement modest proposals such as those of the Study Group⁶ and the American Accounting Association Committee.⁷

One of the fourteen "Basic Postulates" then suggested in this report is: "C-4. *Stable Unit*. Accounting reports should be based on a stable measuring unit."⁸

Accounting Research Study No. 3⁹ followed in 1962 and this contains the suggested "Principles" based on the "Postulates" suggested in Accounting Research Study No. 1. It also includes the following definition:

Net Profit (earnings, income) or *net loss* for an accounting period is the increase (decrease) in owners' equity, assuming no changes in the amount of invested capital either from price-level changes or from additional investments, and no distribution to the owners.¹⁰

This makes it quite clear that "net profit" should only be arrived at after taking into account the effects of price-level changes.

⁵Moonitz, M., *The Basic Postulates of Accounting* (American Institute of Certified Public Accountants, New York, 1961), 61 pp.

⁶*Changing Concepts of Business Income*, pp. 105, 139.

⁷To be discussed later. See footnote 15 in this chapter.

⁸Moonitz, *op. cit.*, p. 50.

⁹Sprouse, R. T. and Moonitz, M., *A Tentative Set of Broad Accounting Principles for Business Enterprises* (American Institute of Certified Public Accountants, New York, 1962), 87 pp.

¹⁰*Ibid.*, p. 9.

26 Accounting for Price-level Changes—Theory and Procedures

The “Tentative Principles” also contain the following relevant statements which concern the balance sheet:

Inventories which are readily salable at known prices with readily predictable costs of disposal should be recorded at net realizable value, and the related revenue taken up at the same time. Other inventory items should be recorded at their current (replacement) cost. . . .¹¹

All items of plant and equipment in service, or held in stand-by status, should be recorded at cost of acquisition or construction, with appropriate modification for the effect of the changing dollar either in the primary statements or in supplementary statements. In the external reports, plant and equipment should be restated in terms of current replacement costs whenever some significant event occurs, such as a reorganization of the business entity or its merger with another entity or when it becomes a subsidiary of a parent company. Even in the absence of a significant event, the accounts could be restated at periodic intervals, perhaps every five years.¹²

All “intangibles” such as patents, copyrights, research and development, and goodwill should be recorded at cost, with appropriate modification for the effect of the changing dollar either in the primary statements or in supplementary statements.¹³

On 4 November 1960, the Accounting Principles Board of the American Institute of Certified Public Accountants discussed whether a consideration of the effects on accounting for price-level changes should be incorporated in the study of the basic postulates and broad principles of accounting or in a separate research project. By the time of the meeting on 28 April 1961, it became clear that the price-level problem was too complex for adequate treatment in the postulates and principles studies. As a result the Board took the action summarized in the following excerpt from its Minutes:

“ . . . the Board . . . agreed that the assumption in accounting that fluctuations in the value of the dollar may be ignored is unrealistic, and that therefore the Director of Accounting Research should be instructed to set up a research project to study the problem and to prepare a report in which recommendations are made for the disclosure of the effect of price-level changes upon the financial statements. In this study, special attention should be paid to the use of supplementary statements as a means of disclosure.”

¹¹Sprouse and Moonitz, *op. cit.*,

¹²*Ibid.*, p. 57.

¹³*Ibid.*, p. 58.

One aspect of the Board's preliminary discussion of the price-level problem is noteworthy. A general feeling was expressed that if price-level changes were to be introduced into financial reporting, the effects on all elements of the financial statements should be disclosed. A piecemeal or partial approach, for example, which would adjust one item and leave all others unadjusted was not viewed with favor.¹⁴

This Accounting Research Study No. 6, *Reporting the Financial Effects of Price-level Changes*, was published late in 1963, and certain references have been and will be made to it in this book. It certainly suggests the disclosure of the effects of price-level changes on "all elements of the financial statements".

It would seem from all of the above that an amendment to the official 1953 recommendations of the American Institute of Public Accountants, as regards accounting for the effects of price-level changes, is a distinct possibility in the near future.

The American Accounting Association

In August 1951 this Association's Committee on Concepts and Standards Underlying Corporate Financial Statements issued Supplementary Statement No. 2 on "Price-level Changes and Financial Statements". In the Summary it said:

It is the judgment of the Committee, therefore, that the time has come to give adjusted dollar statements a thorough test. Such statements should now be, and may continue to be, supplementary to the financial statements based on historical dollar cost. . . .

Since the relationships within the balance sheet and within the income statement, as well as between the two statements, are of importance, the adjustments should be comprehensive in scope to the end that the effect of price level changes will be reflected in each item to the extent appropriate.¹⁵

The American Accounting Association's "1957 Revision" of its 1948 statement on "Accounting and Reporting Standards for Corporate Financial Statements" incorporated the above and went a little further:

Until reasonably uniform principles of adjustment for price changes are commonly accepted, investors should be furnished such supplementary data as would be helpful in evaluating the significance of price

¹⁴*Reporting the Financial Effects of Price-level Changes*, pp. 1-2.

¹⁵American Accounting Association, *Accounting and Reporting Standards for Corporate Financial Statements* (1957), p. 28.

28 Accounting for Price-level Changes—Theory and Procedures

fluctuations in the interpretation of financial reports of the particular enterprise. Supplementary data may be reported to reflect the effect of price changes in the specific assets held by the enterprise during the period, to show the effect upon the enterprise of movements in the general price level, or to achieve both purposes. Adjustment for individual price changes may be effected by determinations of replacement cost or by the use of specific price indexes; adjustment for changes in the general purchasing power of money requires the use of general rather than specific price indexes.¹⁶

Then in 1964, Supplementary (i.e. to the "1957 Revision") Statements Nos. 1 and 2 were issued and the majorities of the two committees concerned recommended the use of single integrated sets of financial statements in lieu of the supplementary financial statements suggested above, and that these incorporate the current costs of long-lived assets and inventories:

The Committee recommends that current cost be adopted immediately as the basis of valuation for land, buildings, and equipment wherever the amounts involved are significant and the available measures of current cost are sufficiently objective.¹⁷

The majority [of the Committee] maintains that [current] replacement cost is the best of several available inventory measurements. To aid interpretation, both historical and replacement cost of inventories should be disclosed in an integrated set of financial statements.^{17a}

The American Accounting Association appears to be moving towards complete integrated proposals in this changing price levels area.

Incidentally, in 1955 and 1956, the American Accounting Association published the now well-known:

Price-level Changes and Financial Statements—Basic Concepts and Methods, by Professor Perry Mason (28 pp.);

Price-level Changes and Financial Statements—Case Studies of Four Companies, by Professor Ralph C. Jones (179 pp.); and

Effects of Price-level Changes on Business Income, Capital and Taxes, by Professor Ralph C. Jones (199 pp.).

¹⁶*Ibid.*, p. 9.

¹⁷ American Accounting Association's Committee on Concepts and Standards—Long-lived Assets, "Accounting for Land, Buildings, and Equipment" (Supplementary Statement No. 1), *Accounting Review*, July 1964, p. 698.

^{17a} American Accounting Association's Committee on Concepts and Standards—Inventory Measurement, "A Discussion of Various Approaches to Inventory Measurement" (Supplementary Statement No. 2), *Accounting Review*, July 1964, p. 700.

The Institute of Cost and Works Accountants

In 1952 this Institute published a book, *The Accountancy of Changing Price Levels*.¹⁸ It was written by the Institute's Research and Technical Committee, and although it "should not be regarded as an official expression of the views of the Council", it "may be regarded as a form of 'text-book' on the subject".¹⁹ It has been reprinted at least three times.

The book is a fairly comprehensive one and is divided into three parts:

- Part One Fundamental Concepts.
- Part Two Accountancy Principles.
- Part Three Accounting Methods.

Whilst many of its theories and methods are not in agreement with those of this author, it is certain that any company adopting them on and from 1 July 1952 would have been much better informed over the following years than all those companies who adhered to the conventional form of accounting based on historical costs.

The following few "principles" have been extracted from a summary of the recommendations in the book.

- I. The calculation and disclosure of real profits falls within the sphere of accountancy.
- II. Provision for the replacement of assets and materials should be made by a charge included in the costs of the sale of goods or the provision of services.
- III. The replacement cost used for calculating the amount charged in costs should be the *current* (or notional) cost of replacement.

- V. The replacement cost should be established as accurately as possible.

- IX. The amounts appropriated and charged should be retained as a reserve.

¹⁸Gee & Co. Ltd., London, 129 pp.

¹⁹*Ibid.*, p. 7.

30 *Accounting for Price-level Changes—Theory and Procedures*

- XII. Reserves provided by way of additional replacement cost appropriation or charge should be shown in financial statements, as a reserve.³⁰

These “principles” give an indication of the ideas expressed in this Institute’s book. Whilst they may not be the “official” views, the Council of the Institute has certainly made a good job of promoting the sales of the book!

The Association of Certified and Corporate Accountants

In 1952 this Association, too, published a book which strongly advocates the adoption of accounting methods incorporating adjustments for changing price levels. The book, *Accounting for Inflation*,^{30a} represents the result of a research project undertaken by the Association’s Taxation and Research Committee, of which the Association’s then President, Lord Latham, was one of the eight members.

The following extract is indicative of the spirit of their report and of the strength of their advocacy:

From the economic point of view the essential feature of the technique that has been suggested in this present work is that it secures:

- (a) a proper computation of business income, and
- (b) a correct valuation of capital assets, by bringing all values into the same time dimension.

In doing so it tends to inject realism into accounts and eliminates the distortion which tends to arise, under conditions of non-stable price levels, in accounting for fixed assets and inventories when this is done on the basis of original cost. It tends to remove, therefore, the possibility of a distorted interpretation which prevents a proper appreciation being made of the underlying real position. In doing so it facilitates the making, by management, of the proper decision as to business policy.

The technique is designed to throw into relief the financial position of the business in terms of current money values. It renders possible an assessment of net worth which is nearer the true state of affairs than can be derived as a result of accounting for fixed asset values on the formalized basis of historical cost. It allows an exact comparison of the earning capacity and indirectly of the efficiency of a given concern against others in the same line of business through meaningful calculations

³⁰*Ibid.*, p. 61.

^{30a}Gee & Co. Ltd., London, 149 pp.

of rates of profit against net worth. It avoids the distorted profit to net worth ratios which recurrently give rise to misgiving amongst consumers and which frequently hamstring wage negotiations. . . .

The technique prevents the distribution of capital as profit and ensures that the proper information and opportunity is available to business to allow the maintenance of the productive capacity. . . .

In the view of the authors, the mere avoidance of possible distortion which the replacement cost technique allows, apart from any other advantages the technique might offer, would be sufficient reason for its adoption.²¹

The Institute of Chartered Accountants of Scotland

The Council of this Institute is much more tolerant towards the use of price-level adjustments than are other chartered institutes. In 1954 the Council issued a statement covering its views on departures from the historical cost principle of accounting. Here are three of the paragraphs:

3. Insofar as the position of an auditor is concerned, the council is of the opinion that what constitutes "a true and fair view" of the state of the affairs of a company and of the profit for a stated period must always be a matter for decision in relation to the facts of a particular case, but that there is *no* reason in principle why an auditor should qualify his report on accounts by reason only of some disclosed departure from the basis of historical cost.

4. The council would welcome experiments by individual undertakings which have as their objective the presentation of accounts in which all items in the trading and profit and loss account are expressed in pounds sterling of the same purchasing power. . . . The desirability of showing in the balance sheet the capital employed expressed in pounds sterling of the same money value also merits consideration. . . . Where there is a departure from the basis of "historical cost" (whether in the body of the financial accounts or by way of supplementary statements), what has been done and the basis adopted should be clearly shown.

5. It is considered that in the field of management accounting it is eminently desirable, in many cases, that account should be taken of changing money values. Failure to do so in times of progressive inflation may well create a complacent attitude not in the best interest of any undertaking as a continuing concern.²²

It can be seen from paragraph 4 above that the Institute of Chartered Accountants of Scotland has no objection to the

²¹*Ibid.*, pp. 94-95.

²²*Accountants' Magazine*, February 1954, p. 109.

32 *Accounting for Price-level Changes—Theory and Procedures*

publication of the annual financial statements adjusted to show the effects of price-level changes provided that “what has been done and the basis adopted” be clearly shown.

The purpose of this examination of the official recommendations and other publications of these professional accountancy bodies has been to show that there is much recognition of those problems created by accounting and reporting in original historical costs. Too many people are unaware of this situation and believe that *all* professional bodies are opposed to making any step in this changing price-level problem area until such time as “the one answer” has been discovered.

This has been brought about, most likely, by the old existing recommendations of the Institute of Chartered Accountants in England and Wales, but, as we have seen, all other bodies recommend steps which appear to be more progressive, even if some do merely consist of advocating the preparation of supplementary statements in current values.

CHAPTER 6

TYPES OF PROPOSALS THAT HAVE BEEN ADVOCATED

THIS is not intended to be a comprehensive coverage but it is thought that this work would be incomplete if no attempt were made to mention briefly the types of proposals that have been advocated in the literature to date. For this purpose it is intended to classify these into four rough categories.

First of all there is the type of proposal which does not contravene even the recommendations of the Institute of Chartered Accountants in England and Wales or the American Institute of Certified Public Accountants. This group suggests that in each accounting period, calculations should be made to assess the amount of inflationary profits included in conventional accounting profits, and that this amount should be the subject of an automatic, compulsory transfer from the Profit and Loss Appropriation Account to Capital Reserve Accounts. The idea is to leave in the Profit and Loss Appropriation Account a net balance which *could* be distributed as dividends without impairing the financial solidarity of the company.

Any additional transfer to reserves designed to increase financial stability or to provide for future expansion from internal sources would be of a voluntary nature and would also come from the net remaining balance.

This group does not wish to interfere with the conventional balance sheet. They propose leaving it as a statement of unexpired historical costs.

In their book, *Inflation and Company Finance*,¹ Professors Mathews and Grant advocate this procedure and it appears that

¹Law Book Co. of Australasia Pty. Ltd., Sydney, 1958, 170 pp.

34 Accounting for Price-level Changes—Theory and Procedures

the authors deliberately set out to recommend compromise proposals “designed to produce meaningful results without departing substantially from existing methods of accounting”.² They also say that their procedures

are not inconsistent with the recommendations of the main professional bodies in Britain and the United States, but involve objective measurement instead of arbitrary decisions as to the amounts to be transferred to reserve, and require the allocations to be made as normal accounting procedures rather than as haphazard acts of financial policy. The principal merits claimed for our proposals are their simplicity and ease of application.³

It is surprising, therefore, that simple, helpful, unobjectionable procedures like these have been ignored by most accountants and their professional institutes.

A *second* type of proposal is somewhat similar to that described above with the exception that those in this group contend that all inflationary profits (and deflationary losses, etc.) should be taken into account *before* arriving at the profit figure for the period. This type of proposal too, of course, results in compulsory transfers to reserves, but from the Profit and Loss Account and not from the Profit and Loss Appropriation Account.

Lionel A. Wilk is an advocate of this type of proposal. In his book *Accounting for Inflation*,⁴ he says that his “profit for the year will be the correct figure after adjustment for the effect of price level changes”.⁵ However, he claims that a balance sheet purporting to show the current net worth of a business would be based very largely on personal opinion and it would “put an intolerable burden on an auditor to demand that he should report on a statement of this description”.⁶

A *third* group advocates the preparation of supplementary financial statements. The idea is to prepare both the Profit and Loss Account and the Balance Sheet in current values as well as in the conventional historical cost form. As was seen in the

²*Ibid.*, p. 32.

³*Ibid.*

⁴Sweet & Maxwell, London, 1960, 184 pp.

⁵*Ibid.*, p. 55.

⁶*Ibid.*, p. 57.

previous chapter, this idea is in accord with the existing recommendations of the American Institute of Certified Public Accountants.

Although it is claimed by some that the two sets of financial statements would be misleading to many, it is obvious that the additional information revealed would be of much value.

Professor Ralph C. Jones, in his book *Effects of Price-level Changes on Business Income, Capital and Taxes*,⁷ points out that no custom, "law or regulation prohibits the publication of supplementary statements in uniform dollars along with the official statements" and that "there are no restrictions which limit the use of uniform-dollar figures for internal managerial purposes".⁸

It is certain, too, that there are no legal impediments in the way of publishing financial statements in current values in Australia—and there certainly are no reasons why supplementary statements could not be prepared for management at least.

Another advocate of this type of proposal is Perry Mason, and in his monograph *Price-level Changes and Financial Statements—Basic Concepts and Methods*,⁹ he says that it is "unlikely under present conditions that adjusted amounts will replace the conventionally prepared figures in the accounts and the published reports. It is more probable that they will be presented as interpretative and supplementary information to the regular financial statements."¹⁰

Mason's forecast might prove to be correct because on p. xi of Accounting Research Study No. 6 this is said:

The effects of price-level changes should be disclosed as a supplement to the conventional statements. This disclosure may take the form of physically separate statements, or of parallel columns in a combined statement, or of detailed supporting schedules (including charts and graphs) or some combination of these.¹¹

⁷American Accounting Association, 1956, 199 pp.

⁸*Ibid.*, p. 145.

⁹American Accounting Association, 1956, 28 pp.

¹⁰*Ibid.*, p. 13.

¹¹*Reporting the Financial Effects of Price-level Changes.*

During and after a proposed transition period, it is visualized that statements in both current and historical costs will be prepared.

Mr. W. E. Parker, a prominent member of the Institute of Chartered Accountants in England and Wales, is another supporter of the supplementary statements idea, as his paper read at the recent Eighth International Congress of Accountants in New York reveals.¹²

The Indiana Telephone Corporation (U.S.) is one company that has prepared supplementary financial statements in the way recommended by this third group. Since 1955 it has "prepared its financial statements in two-column form, one column showing the results under conventional accounting methods and the other reflecting adjustments of depreciation and the related asset accounts".¹³

The *fourth* type of proposal comes from those who wish to incorporate all adjustments for price-level changes within the accounting system itself (and not only in the annual financial statements), thus making it impossible in most cases to prepare two sets of accounting reports, the only set then possible being the set of financial statements in current values.

Mr. A. R. Mutton, a leading Australian Chartered Accountant, is a strong advocate of this type of proposal.¹⁴

N.V. Philips's *Gloeilampenfabrieken* (the world-wide Philips Electrical Companies) have been accounting in this way for many years. Professor A. Goudekot, the Chief Internal Auditor of Philips, has given the following reasons for the complete integration of price-level adjustments in the accounting systems of their many companies:

The object of the accounting system is to provide the management of each section of the concern with the information it requires for operating that particular section, and to provide the top management of the concern with the information required for its central management.

¹²*Accountant*, 3 and 10 November 1962.

¹³*Reporting the Financial Effects of Price-level Changes*, p. 194.

¹⁴*Chartered Accountant in Australia*, December 1960, pp. 264–275.

In accordance with the principles of "accounting for management" the responsible managers of all levels must know periodically the income and the capital employed, both in total and in detail. For this purpose the replacement value [i.e. *current* replacement value] is applied. In other words, the application of the replacement value theory is not merely a calculation technique used in preparing the annual statements of the concern. It is integrated in the accounting system of all sections of the concern at every stage. In this way it is ensured that all information for management is compiled in accordance with this principle and thus the replacement value automatically enters into all management considerations and decisions.¹⁵

Naturally, there are many variations within the four types of proposals mentioned above and all important theoretical differences of any kind will be dealt with in subsequent chapters.

As was indicated in Chapter 1, the proposals to be put forward in this book come within the fourth type of proposals discussed above. To only convert periodic financial statements into current values does not provide the essential current costs for pricing and other management decisions, and would in many cases reveal unsatisfactory trends too late to take immediate corrective action. However, late corrective action could still take place and this probably would not occur if supplementary statements in current values were not prepared at all.

¹⁵*Journal of Accountancy*, July 1960, p. 38.

CHAPTER 7

PROFIT DETERMINATION— THE INDEX PROBLEM

The Matching Process and Profit Determination

To the economist, profit exists if the value of net worth at the end of a period exceeds the value of net worth at the beginning of the period, after making due allowance for any new capital raised and for dividends paid during the period.

For example, the economic profit of a firm would be:

Net worth at end of a period	\$ 10,000,000
<i>Less</i> net worth at the beginning of that period	9,000,000
	<hr/>
<i>Plus</i> interim dividend distributed during the period	1,000,000
	100,000
	<hr/>
<i>Less</i> additional capital raised during the period	1,100,000
	600,000
	<hr/>
Profit for the period =	\$500,000
	<hr/>

In order to obtain his net worth values at the beginning and end of each period, the economist calculates the present value of all future net receipts of the firm. To do this he must estimate the future cash flows (in and out of the firm) and must discount these to the present using an appropriate discount rate, which he must select. Therefore, his profit figure includes all value changes whether realized or unrealized.

For two main reasons it is not practicable for the accountant to adopt this method of profit determination. Firstly, the estimation of the future cash flows of a firm at any time is a very

difficult matter full of uncertainty and is one that depends to a large degree on much personal opinion. It is not possible for an accountant to implement this method of valuation in any objective way, and any two accountants could produce figures varying greatly in size.

Secondly, the selection of an appropriate discount rate is fraught with difficulties, and over the years there has been much debate concerning methods of selecting discount rates in any given set of circumstances. Much subjectivity exists here, too, as there can be much difference of opinion concerning the risk factor which must be reflected in the rate selected in each case.

These and other practical difficulties prevent the accountant from adopting the economist's method of profit determination, and he is compelled to adopt the "matching concept" of profit that he has used for many years. He matches the revenues of a period with the expenses of that period, and to the extent that revenues exceed expenses, there is profit.

In addition to the two main practical difficulties mentioned above some of the other practical issues that compel the accountant to adopt his matching method are:

- (a) Individual sales transactions must be recorded, and in many cases the profit or loss on individual transactions must be calculated.
- (b) Full details of individual fixed assets must be recorded and reported over their lifetime, and this involves the valuation of individual fixed assets periodically (and the calculation of the resultant depreciation charges). Even if it were practical to produce the present net worth of the company as a whole each year by discounting methods, it would not be possible to use this method for individual assets. It would not be practicable to estimate the future net cash flows for individual assets as these often relate to the efforts of a company as a whole and cannot be attributed to the work of individual assets.

40 *Accounting for Price-level Changes—Theory and Procedures*

- (c) It would not be possible to carry out the whole estimating and discounting procedures to produce profit figures required at the daily, weekly or monthly intervals required by managements.
- (d) Further, such regular profit figures are required for individual segments of a company, and this produces added estimating and discounting complications.
- (e) The valuation of the various kinds of current assets (especially inventories) by discounting methods would be too time-consuming in most cases if it were to be completed accurately.
- (f) Full details of transactions with and amounts owing to and by creditors and debtors must be recorded by the accountant.
- (g) With manufacturing companies it is necessary for accountants to produce the cost of individual articles manufactured for control and pricing purposes, and to be effective, this must be carried out by producing departments and for the various cost components. Discounting methods would not be practicable in this area.

However, the accountant must realize that his “matching” methods often do not constitute a real profit concept at all, and this is evidenced by many of the ways in which the revenues and expenses used in the matching process are calculated by many accountants in current practice. Conservative revenue realization methods and their conflicting ways of recognizing expenses often tend to ignore the fact that the purpose of the exercise should be to produce a profit figure which has some meaning, i.e. which reflects the amount by which operations have resulted in the company being “better off”.

A review of accounting literature indicates that the realization and matching concepts were only devised as a means of approximating increases in wealth. Unfortunately in current accounting practice they

have tended to become accepted for their own sakes, regardless of their measure of wealth income.¹

Therefore, one thing that must be done in the matching process is to ensure that the matter of changing price levels is not ignored and that accountants use *current cost* figures when matching expenses with revenues in the profit determination process.²

But how are current cost figures to be arrived at when past historical costs are out of date? Revenues will be in “current costs”, but how are accountants to convert old historical costs to current costs for the correct matching of expenses and revenues?

Unfortunately, this is the one area where most disagreement exists between the many who advocate accounting for the effects of price-level changes. Although there would seem to be a deep chasm between the two main schools of thought, the results produced by each in most cases would not differ by much in practice. This, however, does not mean that the matter can be put aside. An important theoretical issue is involved, and the results produced by each school would not tend to be similar in every case.

The Two Main Schools of Thought Concerning Indexes

One school advocates the using of one general index for all necessary adjustments of expenses,³ and its members want this index to represent the movement in the prices of all the goods and services in the country. They want the index to represent the movements in the prices of “all things in general”. They want the index to be the reciprocal of the value of money itself. They want their index to measure pure inflation or deflation—as distinct from the movements in the prices of specific items or

¹Sands, J. E., *Wealth, Income and Intangibles* (University of Toronto Press, 1963), p. 41.

²It is believed that the methods subsequently recommended in this book for dealing with some so-called “holding gains and losses” (combined with the “matching process”) result in most cases in a better profit figure *for the firm* than the economist’s concept of profit.

³Mainly depreciation of fixed assets and costs of goods sold.

groups of items. This school wants to adhere closely to the concept of historical cost in that they merely wish to restate all past costs in accordance with the current value of the currency unit.

The other school advocates the using of several specific indexes, with each index measuring the specific movement in the relative expense for each firm. They wish to restate the historical cost of each item in accordance with the current specific cost of that item. They want to record the effect of price-level changes as they affect each specific firm. They do not want to record the effect of the general inflation or deflation, which by itself is considered to be irrelevant. They claim that the movements in the prices of "all things in general" have no specific bearing on each individual or individual firm. They claim that it is only the movements in prices of those things in which each firm or individual is interested that are relevant, in each case.

An example to make the difference in thinking between the two schools more clear might help at this point.

A building is purchased in year 1 for \$100,000. During year 5 the general price index has moved from 100 to 140 and the specific index for buildings of this type has gone from 100 to 150.

The first (general index) school would want to record the year's depreciation (at 5%) at \$7000.

On the other hand, the second (specific index) school would want to record depreciation for the year at \$7500.⁴

Jean St. G. Kerr explains the difference between the two schools of thought in this way:

Under the adjusted-historical-cost concept of income [i.e. using one general index] the original capital contributed is considered as providing a pool of purchasing-power-units which are invested in various forms and on realization represent another pool of purchasing-power-units. The capital to be maintained intact is represented by the purchasing-power-units in the original contribution, and this is effected when the money value of capital has increased in proportion to the general price level.⁵

⁴The matter of adjusting the already existing provision for depreciation account balance will be discussed later.

⁵*Australian Accountant*, April 1956, p. 141.

Under the current-cost concept of income [i.e. using several specific indexes] the emphasis is placed on things, physical assets, rather than on money or purchasing-power-units, as a result of which the capital at the beginning of the period is considered as comprising a group of physical assets which is eventually converted into funds, a portion of the funds being used to replace the physical assets and the balance being the income for the period. We then have a change from accounting for things in terms of money or purchasing-power-units, to accounting for money in terms of things, and the capital which is being maintained intact is the real physical capital and not the financial capital, or a pool of purchasing-power.

Maintenance of physical capital intact in this context does not mean that the actual replacement must have been made in the period concerned, but that the capital at the end of the period can be exchanged for the same collection of goods as was owned at the beginning.⁶

The people who hold these opposing views are very definite in their beliefs, as the following few statements by men of ability show.

Mr. Lionel A. Wilk in his book *Accounting for Inflation* says: "The first essential is a yardstick and the only one which is applicable to all business and to all types of assets and liabilities is the general purchasing power of money."⁷

Professors Mathews and Grant in *Inflation and Company Finance* say: "There can be little doubt that the adjustments made by the individual firm should be carried out by means of specific indexes."⁸

Professor W. J. Graham commenting on the method used by the Philips Electrical Companies states: "It demonstrates that adjustment of accounts to reflect price change is practical. It should be noted that adjustments based on a single general price index would be even more practical."⁹

Despite this, however, Philips are still adhering to their system of specific indexes.

Mr. A. R. Mutton, a chartered accountant, writes: "The only

⁶*Ibid.*, p. 142.

⁷p. 35.

⁸p. 21.

⁹*Journal of Accountancy*, August 1960, p. 29.

44 *Accounting for Price-level Changes—Theory and Procedures*

index to be used is one which records changes in monetary cost of things in general.”¹⁰

And Dr. Alphonse Riverin, another chartered accountant and Director of the Bureau of Industry and Commerce, Quebec, Canada, says: “it seems clear that only specific indices can give positive results.”¹¹

The following extract from Accounting Research Study No. 6 shows that it suggests the use of one general index.

In the supplementary data, all elements of the financial statements (e.g., balance sheet, income statement, analysis of retained earnings) should be restated by means of a single index of the general price-level as of the balance sheet date so that all the financial data will be expressed in terms of dollars of the same purchasing-power.¹²

Why Are there Two Main Schools of Thought on Indexes?

What then is the trouble? Why is there all this difference in opinions? What are the bases for each school of thought? Professor R. S. Edwards could have the answer in this quotation he makes from Oliver Wendell Holmes:

I will tell you what I have found spoil more good talks than anything else; long arguments on special points between people who differ on the fundamental principles upon which these points depend. No men can have satisfactory relations with each other until they have agreed on certain ultimata of belief, not to be disturbed in ordinary conversation, and unless they have sense enough to trace the secondary questions depending upon these ultimate beliefs to their source.¹³

It would seem that this could apply to the question of one general index versus several specific indexes. I firmly believe that it depends on one's environment and on one's subconscious ideas on for whom or for what accounting systems are maintained. If it is felt that the whole purpose of accounting is to look after the interests of the shareholders or proprietors, then it is almost certain that the use of one general index will be favoured for

¹⁰*Op. cit.*, p. 273. ¹¹*Op. cit.*, p. 423.

¹²*Reporting the Financial Effects of Price-level Changes*, p. xi.

¹³Baxter, W. T. (Ed.), *Studies in Accounting* (Law Book Co. of Australasia Pty. Ltd., Sydney, 1950), p. 243.

profit determination purposes; so that the number of purchasing-power units contained in the monies subscribed to the business by shareholders will be maintained throughout a period of changing prices.

However, if it is believed that the whole or prime purpose of accounting is to assist the entity (the firm) in its daily struggles (and that only in this way will the interests of shareholders be looked after in the long term), then it is almost certain that the use of specific indexes will be favoured, i.e. so that the physical assets of the business will be maintained during the period of changing prices.

Consequently, it so happens that most accountants in public practice favour the use of one general index because many of their duties relate to the protection of the interests of shareholders. On the other hand, accountants in commerce and industry usually favour the use of specific indexes. The author of this book has been affected by his environment (in industry) and he is a firm supporter of the use of specific indexes for the determination of profit, for balance-sheet valuations, and for day-by-day accounting and reporting purposes.

It follows, then, that whilst arguing the case of specific indexes in the following pages, the author still realizes that the issue is probably more fundamental than the points raised might indicate.

It seems that those who look upon a company from outside its four walls are those who would want its profit determined with the aid of one general index.

It seems, too, that those who look upon a company as from within will want its profit determined with the aid of specific indexes (or specific prices if available). People in this category often feel as if they are part of the firm.

The first group continually think of paid-up capital as *if* it were actually back in the hands of the shareholders themselves, and hence they want to see this capital "increased" in order to keep pace with the movements in general purchasing power of money. They want to ensure that shareholders would be placed in exactly the same position as regards purchasing power *if* the

funds were placed back in their hands. Their prime interest is that of the shareholders (consciously or subconsciously).

On the other hand, the second group, comprising those who look on a company as from within, is not conscious of the shareholders in the first instance. They want to see the entity's (company's) physical stock of assets and operating capacity maintained from period to period before arriving at profit—thus involving the use of specific indexes. They want to see the capital “increased” from period to period in order to keep pace with the rising prices of the company's assets. Their prime interest is that of the company itself.

The Going Concern Concept Is Involved

It is contended, therefore, that those who support the general index concept of current cost for profit determination either consciously or subconsciously do not subscribe to the going concern convention.¹⁴ They want to see the shareholders' interests protected in such a way that if the company ever went into liquidation, the shareholder would receive at least the same number of purchasing-power units as those he put into the company in the first place.

Mr. M. J. Greener in arguing for the use of one general index actually uses the words: “. . . should the business be wound up the proprietors would receive in real terms . . .”¹⁵

Professor Corbin uses these words: “Inasmuch as the stockholders have increased their equity in terms of purchasing power . . .”¹⁶

Professor Hendriksen in describing the general index method says: “The procedure assumes that capital is maintained only if the purchasing power of the stockholder, as a consumer, is held intact;” and “It assumes that the corporation will liquidate at

¹⁴This is similar to Basic Postulate C-1 which reads: “Continuity—In the absence of evidence to the contrary, the entity should be viewed as remaining in operation indefinitely.” Moonitz, *op. cit.*, p. 50.

¹⁵*Accountant*, 7 October 1961, p. 457.

¹⁶*Journal of Accountancy*, December 1960, p. 28.

some time in the future or that the owners will have consumption as a choice when the existing assets are retired.”¹⁷

Jean St. G. Kerr seemed to confirm this contention, too, when she described the general index idea as one in which “the original capital contributed is considered as providing a pool of purchasing-power-units which are invested in various forms and *on realization*¹⁸ represent another pool of purchasing-power-units”.¹⁹

But the company is *not* going into liquidation. It hopes to survive, expand and prosper. The shareholder is not going to be paid back his monies. The shareholders’ interests are in the stock exchange where share prices will reflect management’s efforts to make the company prosper and survive. This can only be done by ensuring that the physical assets of the company are protected at all times, and that in addition, satisfactory profits are earned.

A company usually has certain limited objects, and the maintenance of its capital should be considered in relation to those objects. If adjustments are made by reference to a *general* index, differences between changes in the (current) replacement cost of the particular classes of assets used in the business and changes in the general price level will be registered in current income, which will no longer reflect the current costs of using the particular classes of assets owned by the company.²⁰

If the concern is going to survive, accounting for the concern must be carried out in costs which are real and specific to it, and not in costs which are intended to reflect the general purchasing power of money.

If a company buys articles for \$1000 and eventually sells them for \$2000 at a time when their current cost is \$1500, but when the general index has increased from 100 to only 125, the real surplus *to the company* is only \$500 (i.e. \$2000 — \$1500) and not \$750 (i.e. \$2000 — \$1250). In the measurement of income from

¹⁷*Price-level Adjustments of Financial Statements*, pp. 20 and 49.

¹⁸My emphasis.

¹⁹*Op. cit.*, p. 141.

²⁰Mathews and Grant, *op. cit.*, p. 21.

ordinary operations, the relevant expired cost when that material is utilized is the cost of replenishing the inventory.²¹

Profit, to a firm, can exist only after matching against revenues the firm's specific current costs of the assets which are used up in earning those revenues. Only by recording its own specific costs can any company know its real profits. Only in this way can a company know exactly where it is going, what real margins it is producing in the selling prices it is obtaining, and what real return it is getting on its real capital. Only in this way can a company be a real benefit to its shareholders in the long term. Profit must be calculated using the going concern specific current costs of the firm in order to reveal to the shareholders its long-term profit possibilities. To do otherwise would be misleading the shareholders.

General "price level adjustments by themselves can ensure only that a firm will not unwittingly disperse its *real historic cost*, which is quite different from its *real capital*".²²

Some Arguments against Specific Indexes— and Some Rejoinders

One of the common arguments against the use of several specific indexes and current specific prices (if available) is that it is useless to attempt to maintain a capital stock of certain assets as there is no certainty that any one set of assets will be maintained, that is, the type of assets held by any one company can change in a material fashion from period to period. Mr. L. Wilk argues in this way:

The very fact that specific indices are adopted *must* mean that the object of the exercise is to be in a position to replace existing assets. Of what value is a calculation on this basis when assets are eventually replaced—as often happens—by others to which an entirely different

²¹American Accounting Association's Committee on Concepts and Standards—Long-Lived Assets "Accounting for Land, Buildings and Equipment", *Accounting Review*, July 1964, p. 696.

²²Edwards, E. O. and Bell, P. W., *The Theory and Measurement of Business Income* (University of California Press, 1961), p. 22.

index is applicable? The whole basis of the original calculations is nullified.²³

That this “often happens” is doubted, as companies do tend to remain in their particular industries. Companies in particular industries use certain kinds of assets and stocks, and the tendency is for these to be replaced by similar kinds of assets and stocks. To picture the case of a company changing from one industry to another is to forego the going concern concept, for here we have the virtual liquidation of one company and the setting up of another.

In any case, profit is for a period *ended* and it should measure the amount by which the firm is better off after taking into account the specific current costs of assets used up in producing the revenues of that period. Such profit is created by daily and monthly transactions and not just at the end of the period when the profit figure for the whole year is calculated. This profit is reinvested immediately throughout the period in other assets, *and it does not matter if these are of a different kind*, provided that the specific current costs of using up these during the remainder of the period are also taken into account in the profit calculation. In this way the creeping changes that occur within a firm through technological improvements, diversification, automation, etc., are taken care of in a correct manner while using specific indexes for profit determination.

The profit must be that for the firm as it stood during the period concerned, i.e. complete with any diversifications which may have been commenced during the period. The profit must be that which shows just how much can be taken from the business and still leave its capital intact for its then existing objects. These surplus funds could be used for dividends, further diversification, etc. The point is that the profit must measure the surplus for the firm for the period under review, for the way it existed during the period; and taking into account the costs which were specific to it during that period.

²³*Op. cit.*, p. 35.

Money has different values in the hands of different people and different firms. In each case it depends on the use these people and firms have for this money. All depends on what things they usually buy with their money. One general index of prices designed to show changes in the value of money can have no meaning to any one person or firm. As Professor R. S. Edwards says:

If we are to measure changes in the value of *money* by examining changes in the prices of particular goods and services, we have to choose the goods and services and the weight which we shall attach to each. It is clear, therefore, that the conclusions which we draw as to movements in the purchasing power of money depend on the choice of data. The importance of a given index number may be quite different to different individuals. To a poor man a rise in the index number due to a rise in the price of tea and sugar is probably much more important than it would be to a rich man, while a rise in the number due to the price of Rolls-Royce cars means nothing to the poor man. Can an index be framed which will give the right significance to all commodities for all people? Clearly not—the importance of price changes depends on how you spend your money.²⁴

This view is supported by the economic statisticians with whom this matter has been discussed. They claim that a general index can be prepared for a particular application *if* that particular application is known before setting about sorting out the commodities (and the respective quantities) to be included in the basket for the index. For example, in the United States of America and in Canada there are general indexes called “Gross National Product Implicit Deflators”. These have been constructed for one particular purpose, i.e. that of deflating the gross national product figures in those countries. It is not possible to apply (correctly) these indexes to other purposes.

In other words, these economic statisticians say that it is possible to construct a “general index” for each person or firm, but not one overall index to suit all. It depends in each case on what individuals or companies buy with their money.

Mr. L. Wilk has written that Professor Paish, in his evidence to the Royal Commission on the Taxation of Profits and Income,

²⁴*Op. cit.*, p. 293.

stated that the preparation of a general index was "quite feasible".²⁵ What Professor Paish did say is: "No such general price index, covering industrial as well as consumption goods, exists at present; but it would not be difficult to construct one which would give a more satisfactory result than any now in existence."²⁶ This statement seems to have a different emphasis from that inferred.

Mrs. Anstey, a Royal Commissioner at the same inquiry, made an important and legitimate point in a question directed to Professor Paish, when she suggested that to tax companies on profits derived after adjusting costs in accordance with a *general* index would differentiate against companies whose costs had risen at a steeper rate²⁷ (and vice versa).

If a general index were adopted, it would have to include a wide range of commodities such as meat, butter, shirts, lathes, land, buildings, cars, bread, T.V. sets, diesel fuel, rents, heavy plant, machinery, underwear, etc. How could a producer of steel apply such an index to the depreciation on his rolling mills in order to arrive at the correct current costs of using those mills? Surely he could take into account only the movements in prices on the type of equipment he is using, and not the movements in the prices of meat, butter, shirts, T.V. sets, etc.?

Some point out that if prices in general, revealed by a general index, remained stable, specific indexes for various types of assets could still be rising or falling according to supply and demand factors, technological changes, etc.²⁸ The first reaction to such a statement could be the asking of the question "Remained stable to whom?"

"Even in a period of over-all price stability some individual prices move up, some down."²⁹ And this seems to be the crux

²⁵*Op. cit.*, p. 38.

²⁶Minutes of Evidence, Royal Commission on the Taxation of Profits and Income, H.M.S.O., 1952, p. 227.

²⁷*Ibid.*, p. 231.

²⁸For example, see *Reporting the Financial Effects of Price-level Changes*, p. 6.

²⁹*Ibid.*

52 Accounting for Price-level Changes—Theory and Procedures

of the matter. These individual specific price movements must be taken into account by individual people and firms in their efforts to determine if they are better off or not. Dr. Riverin makes this point very clearly:

A firm has made no economic progress unless it has recuperated the replacement cost of the assets it uses (i.e. current cost of actual assets expended) because at that moment only has it maintained its capital intact. Figures which have been adjusted by means of a general price level index might in some instances be closer to the truth than those which have not been adjusted. However, it must be admitted that in order to reflect the replacement cost it is necessary to use indices which have been especially prepared for each category of assets utilized or owned by the firm. This method of adjustment is certainly much more useful because the former merely determines whether the purchasing power of the total capital has been maintained rather than reveals whether the replacement cost of the various assets has been recuperated. . . It should be observed that it is the results of business that must be measured and not the results obtained by the investors due to business operations. The accounting of business is not the accounting of the shareholders or of the bondholders. To keep the previous idea of determining a real profit, it seems clear that only specific indices can give positive results.³⁰

And these specific indexes can move while a general index remains still!

Suppose the situation were reversed and the specific index for a fixed asset item remained stable while the general index rose. It is considered that it would be basically incorrect and akin to misrepresentation to show that this asset item had increased in value (e.g. for balance-sheet purposes). It is also considered that in these circumstances, the firm's cost (to itself and not to the shareholders or the nation in general) of using up the asset had not increased either, and should not be adjusted upwards in accordance with the move in the general index.

Use a Consumer Price Index?

It was contended above that those who support the use of one general index, consciously or subconsciously, want to see the

³⁰*Op. cit.*, p. 423.

shareholders' interests protected in a way which would enable them to receive back the same number of purchasing-power-units should the firm ever go into liquidation. It seems therefore, that the use of a general index such as a gross national product deflator might not suit their purpose and that an index similar to Australia's Consumer Price Index, on which basic wages and wage awards tend to be based, would suit their purpose better. The use of such an index would be of greater assistance in protecting the interests of shareholders as consumers.

A consumer price index is made up from a basket of those commodities on which individuals tend to spend their money, and it does not include the type of capital equipment which many companies purchase, and which would have to be included in a general index.

Professor R. J. Chambers supports the idea of using "a consumer's goods index"³¹ and one of the reasons given by him is that "all users of financial statements are themselves consumers, and they will therefore have an idea of the significance of numbers of monetary units which express capacity to purchase consumer's goods".

This statement, of course, goes right back to one's basic beliefs concerning the purpose of maintaining accounting records, i.e. whether the *main* purpose is for the entity itself and to aid management's planning, controlling and decision-making functions, or whether the *main* purpose is to enable information to be supplied to shareholders periodically.

It is still contended here that the main purpose of accounting is to aid the entity itself and to assist its management in its day-to-day activities. In our society, production and business activities are carried out by entities of varying kinds, and it is for these entities (and their management) that accounting systems are kept. Shareholders have their own private records. The idea that the accounting records of firms are kept for the benefit of shareholders

³¹Measurement in Accounting, University of Sydney, January 1963 (unpublished monograph).

54 *Accounting for Price-level Changes—Theory and Procedures*

would seem to hark back to the days when it was difficult to distinguish between the entity and the proprietor. Further, many entities do not have shareholders.

If all past costs of a company were to be adjusted in accordance with this consumer price type index and not with the aid of a general index (based on *all* types of goods and services), the producer of steel, for example, would seem to be worse off than described previously. For him to adjust his costs in accordance with this consumer price type index would give him a profit figure more unrealistic than that obtained if he were to use a general index, for the former does not include any large capital equipment in its basket of commodities.

The use of a consumer price index would seem to be illogical, too, in the case where all shareholders were bought out by new shareholders in another country. If the company's accounts were being adjusted by the consumer price index, would they not have to be restated in accordance with the consumer price index applying in the country where the new shareholders reside?

Notwithstanding anything that has been said above, it is agreed that every endeavour should be made each year to increase dividends in accordance with the consumer price type index, so that the dividend income of the ordinary shareholder will increase at the same rate (or at a faster rate) than that of his costs. The ability to do this could be one of the measures of the efficiency of each company in a society. If this aim can be followed, it is very likely (all else being equal) that the price of the respective shares at the stock exchange would increase at a somewhat similar rate. This dividend aim, however, must not affect the basis of *determining* profit for each firm.

The company's costs (to itself) can only be determined by the use of specific indexes (i.e. where adjustments to past costs are necessary)—and not by a general index—and certainly not by a consumer price type index.

The extent to which the specific indexes relevant to a firm change at a different rate than the consumer price type index (or the general index) might be the shareholders' bad luck

and is part of the risk they must take as the owners of ordinary shares. It is better for them to suffer to a minor extent from slightly decreased dividends from time to time than for the company to be weakened in the long term by paying dividends in excess of the firm's real profits and capacity to pay. To do this would weaken the firm's future stability and growth capacity. However, if dividends cannot be increased in accordance with the consumer price index, second thoughts might have to be given by management to continuing the fight in what could be a high cost industry, i.e. when it is compared with others.

An evaluation of the stockholders' position, then, must rely on such measurements as the ability of the firm to pay dividends of a constant purchasing power and the ability of the firm to replace its assets or maintain its investment in real terms, without obtaining additional external investment funds.³²

How Specific Should the Specific Indexes Be?

From what has been said in the preceding pages it is obvious that this work recommends the using of specific indexes by individual firms to adjust accounting records and reports to current terms when prices are changing. But just how "specific" should these indexes be?

It has been stated above that those costs which are current to each individual firm should be used for profit determination purposes if the real result for each firm is to be known. Therefore, if the asset items (inventory items or plant items) are still available in the "shop windows", there is no need to resort to a specific index at all. The more specific the available information is the better, and the more accurate the accounting will be as far as each firm is concerned. For example, there would be no need to resort to a specific index to locate the current cost of inventories being carried or consumed if current price lists were available. Current, normal or standard input prices are more accurate and more real than any adjustment of past costs carried out with the aid of specific indexes.

³²Hendriksen, *op. cit.*, p. 78.

However, there are many items currently on the shelves or in the fixed asset registers of firms which are no longer available in the market place, and for these it is necessary to resort to specific indexes in order to ascertain both the costs of using them up and the current cost value of any residual. The more specific the index used for this purpose the better. An index compiled for each such asset of each firm would be the ideal situation, but, of course, this would not be economically practicable in most cases.

Professor Dwight R. Ladd says this:

The most direct way of determining current replacement cost new is to utilize the current market price of comparable assets. . . . In many cases, something more is required because changes in technology, design, processes, etc. have been of such magnitude that even approximate duplicates are not available. In such instances resort must be had to specialized indexes of labor and material costs from which the cost of replacing the asset today can be estimated.³³

It might be possible to compile indexes for each class of asset used by each firm, or for types of assets used in each industry, or for similar types of assets used by several industries. Any of these would give a fairly high degree of accuracy, but the further the index is removed from the specific costs of the individual firm, the less accurate the accounting records and reports of that firm must tend to be.

The Philips Electrical people compile their own indexes and this often causes much consternation to many when they first learn of this practice. However, when it is realized that the Philips people employ economists and statisticians to do most of this work, and that the objective evidence of their many calculations is available for audit if required, the situation does not seem so bad. Indexes prepared by governmental statistical bureaus, banks, trade associations, etc., can always be used for comparison purposes, too. In any case, the firms at present taking the effects of price-level changes into their accounting

³³Ladd, D. R., *Contemporary Corporate Accounting and the Public* (Richard D. Irwin Inc., 1963), p. 81.

and reporting systems do so for their own benefit and edification, and have no desire to be dishonest with themselves. The idea of using accounting records for many management purposes is growing, and such uses will increase greatly as soon as accounting records and reports are made more realistic by the incorporation of current costs.

Professor Eldon S. Hendriksen in an unpublished paper, "Current Trends in Financial Reporting of Price-level Changes",³⁴ criticizes the use of "current input values" in lieu of costs restated by the use of specific price indexes reflecting the changes in specific purchasing power because he wishes to account for any differences between these separately, i.e. as "holding gains and losses". Although this matter will be dealt with in the next chapter, it must be said here that it is not suggested that temporary, abnormal prices should be used for the restating of past costs in current terms.

A manufacturer using a current standard cost system usually values his raw material, work in progress, and finished goods inventories at standard costs based on normal current conditions, and he usually treats any variances therefrom as profit or loss items. The same principles are recommended in this area of specific current costs in times of changing price levels.

Professors Edwards and Bell have no such objections to using current input prices. They say:

With inventories, such (current) prices are readily ascertainable for the most part; the assets are generally marketed continuously, and a telephone call or an arrangement with a seller for a period-end statement would be all that is needed.³⁵

Some types of fixed assets are marketed continuously as new products and are subject to little technical change. The current purchase price of such assets new, at the end of a period, may be obtained in the same way as the current purchase price of raw materials, by a telephone call or by arrangement for a year-end statement from the selling company. . . .

Where no market exists for new fixed assets of the type used by the firm, two means of measuring current costs are available: (1) appraisal,

³⁴Read to a meeting of the American Accounting Association at Stanford University, California, in August 1963.

³⁵*Op. cit.*, p. 137.

and (2) the use of price index numbers for like fixed assets to adjust the original cost base to the level which would now have to be paid to purchase the asset in question.³⁶

Some Variations from the above Specific and General Index Schools

The previous pages of this chapter have described the two main schools of thought on indexes, i.e. the general index and the specific index schools. Before leaving this area certain ideas which reveal variations from these two themes should be looked at briefly.

Although Accounting Research Study No. 3, *A Tentative Set of Broad Accounting Principles for Business Enterprises*,³⁷ recommends the inclusion of inventories in the balance sheet at specific current replacement costs,³⁸ and although it recommends that costs of goods sold be based on specific current replacement costs, its concept of profit is definitely a *general index* one!

The Accounting Research Study recommends the recognition of "holding gains or losses"³⁹ which convert the specific index profit obtained by the using of costs of goods sold at specific current replacement costs to a general index profit. This is brought about by treating as profit (or loss) any rise (or fall) in the specific current cost of an existing asset item over (or below) the original cost adjusted by the general index.

For example, picture an inventory item purchased for \$100 when the general index stood at 100. If the current replacement cost of this item rises to \$120 before it is sold while the general index rises to 110 only, then the recommendation in Accounting Research Study No. 3 is to recognize a \$10 "holding profit".

³⁶*Ibid.*, pp. 185-186.

³⁷Sprouse and Moonitz, Chapter 4.

³⁸Except inventories which are "readily salable". It is recommended in Accounting Research Study No. 3 that inventories which are "readily salable" be included in the balance sheet at "net realizable value".

³⁹Holding gains and losses will be discussed in the next chapter. The idea was adapted from *The Theory and Measurement of Business Income* by Edwards, E. O. and Bell, P. W., 323 pp.

If the item is then sold for \$150, there will be a further profit of \$30. Thus the Accounting Research Study recommends the recognition of its general index type (profit totalling \$40 in this case) in two stages.

To the extent that “holding profits and losses” are recognized before the relative asset is sold, there is an earlier recognition of these than in the usual concept of profit arrived at with the aid of a general index in times of changing prices. But it is a general index concept.

Some indexes suggested by others from time to time are either not quite so “general” or not quite so “specific”. They lie somewhere between the two schools of thought described in this chapter.

To date, two of the *general* index type have been mentioned:

1. A general index designed to embrace the price-level changes in all things in general, and which, if used, would tend to protect the overall purchasing power of capital invested by shareholders.
2. A consumers’ price index which includes those kinds of goods and services purchased by the average consumer. The use of such an index would tend to protect the purchasing power of shareholders as consumers.

To these another type of general index can be added:

3. A general investment purchasing power index. Such an index would include only those types of goods and services in which firms in all industries invest. The use of an index such as this would tend to protect the purchasing power of firms as investors in all industries in general.

Although he seems to be wavering slightly between this third type of index and one a little more specific (yet to be listed), Professor Hendriksen, after a stimulating discussion on indexes, finally comes out in favour of this general investment purchasing-power index in a recent article.⁴⁰

⁴⁰Hendriksen, E. S., “Purchasing Power and Replacement Cost Concepts—Are They Related?”, *Accounting Review*, July 1963, pp. 483–491.

Some types of *specific* indexes which are not as “specific” as that recommended in this work are now mentioned.

1. A specific index for each type of commodity used in each industry. The results from using such indexes would be only slightly inferior to those obtained from using input prices or indexes specific to each individual firm. The use of an index such as this certainly would tend to protect the purchasing power of the firm situated as it is in its own industry or industries.

2. A specific index for each class of commodity used within the nation as a whole. The use of such indexes would not produce results quite as accurate as those obtained by using indexes described in “1” immediately above, but they would be very satisfactory if nothing better were available. It is quite likely that the Commonwealth Bureau of Census and Statistics in Australia would be capable of producing such indexes with little extra effort. Much or most of this information would be available already in their records, and is used currently in producing indexes of a combined nature.

3. A purchasing-power index for each firm. This index would be made up from a basket of all those commodities in which a firm normally invests in the course of its business. Such an index would tend to protect the purchasing power of each firm, but not as positively as when specific input prices or indexes are used in respect of each commodity handled.

4. A purchasing-power index for each industry. This index would be slightly more general than that described immediately above. It would tend to protect the purchasing power of those firms operating in a specific industry, but with less accuracy. This is the type of index towards which Professor Hendriksen seemed to have some leaning.⁴¹

In Chapter 3 of his excellent book, *Price-level Adjustments of Financial Statements—An Evaluation and Case Study of Two Public Utility Firms*,⁴² Professor Hendriksen conducts a most

⁴¹*Op. cit.*, p. 491.

⁴²Washington State University Press, 1961.

comprehensive discussion on the various types of indexes which could be used for conversion of historical costs to current values. His emphasis and conclusions are somewhat different, of course, from the ones made here.

Indexes and “Objectivity”

There are many people who hesitate to use indexes of any kind to transform historical costs to current costs because of some fear concerning “objectivity”. Accountants, by tradition or in accordance with something to do with conservatism, have been bound to objective evidence over the years. They have hesitated to authorize or verify entries unless there is some objective physical evidence to support the entries. While the definition of “objectivity” might be debated among some accountants, the following rigid interpretation is typical.

. . . Financial information is objective when:

1. It is free from personal opinion and bias, which further requires
 - (a) that there actually be an exchange of something for something, both having “value”, and
 - (1) this exchange be the result of an arm’s length transaction between independent parties,
 - (2) this exchange is capable of being accurately measured in dollars,
 - (3) that one of the negotiating parties be the unit for which the accounting is being done.
2. It is substantiated or capable of being substantiated by an independent investigation.⁴³

A strict interpretation of this would make it difficult to bring to account such things as depreciation, provisions for bad debts, many accruals, the transforming of historical costs into current costs, and so on. All of these factors, and many more, require analytical thought and must be brought to account if meaningful data are to be produced.

It is agreed that “if economic activity occurs during specifiable periods of time, then accounting must be continuously concerned

⁴³Arnett, H. E., “What Does ‘Objectivity’ Mean to Accountancy?”, *Journal of Accountancy*, May 1961, p. 65.

62 Accounting for Price-level Changes—Theory and Procedures

with the recognition and allocation of events".⁴⁴ It is a pity that the conventional idea of objectivity has been used by many as a means of rationalizing traditional practices while the logic of the situation has been ignored.

Whether objectivity has or has not been abandoned in a given situation is a moot question. Relevance of data is often more fundamental to the statement user than objectivity in the absolute sense, yet the data in these cases are still expected to meet certain tests of reliability and verifiability. These tests are met in various ways: by employing acceptable accounting methods, by applying these methods in a consistent manner, by leaving as clear an audit trail as possible, and by having the data compiled and checked by competent authority. Thus, the user of accounting data has a measure of assurance that the reported data is free from personal bias, that two or more competent authorities working with the basic information for the purposes intended by the report would have come out with approximately the same final results. Whether these are tests of objectivity, of relevancy, or of reliability is really unimportant.⁴⁵

It is considered, therefore, that current input prices, specific indexes, or for that matter general indexes, *are* acceptable evidence. They do provide a clear audit trail, they can be checked by a competent authority and they would be free from personal bias as far as the user is concerned.

Professor Hendriksen says that "index numbers applied to historical costs lend objectivity to the resulting figures".⁴⁶

In any case, if real, meaningful accounting records and reports are to be produced, "the imponderables have to be handled somehow, and judgment fills the need. We must, however, distinguish situations where judgment could be replaced by better statistical procedures from those in which the variables cannot be 'quantified' or, perhaps, even identified."⁴⁷

Some words of the famous late Mr. George O. May are relevant at this stage.

⁴⁴Moonitz, *op. cit.*, p. 33.

⁴⁵"Report of the Management Accounting Committee of the American Accounting Association", *Accounting Review*, July 1962, p. 532.

⁴⁶*Price-level Adjustments of Financial Statements*, p. 51.

⁴⁷Moonitz, *op. cit.*, p. 34.

People seem to look for perfect solutions to every problem. Well, there just aren't any perfect solutions to the problems of accounting . . . They said, "You can't measure depreciation. If you use the straight line method, you will get a figure X ; if you use the diminishing balance method you will get $2X$. If it can be either X or $2X$, it's no good trying at all". Now they are saying, "So you want to adjust by a price index. Well, one index gives you 165; another 175; and still a third gives you 190. Since you can't say which index is best, we won't take any." But, surely, the answer to that kind of comment is that you would be more nearly right if you used any one of the indexes than if you made no adjustment of the figures at all.⁴⁸

And in conclusion, as Lord Keynes is supposed to have said, "It is better to be vaguely right than precisely wrong."

⁴⁸*Journal of Accountancy*, June 1955, p. 41.

CHAPTER 8

ASSET VALUATIONS—"HOLDING GAINS AND LOSSES"

Asset Valuations

In the first pages of the previous chapter the matter of valuing net worth and individual assets by discounting future estimated cash flows (in and out), using an appropriate discount rate, was discussed. It was said that this method of obtaining present values of assets was not practicable for accounting purposes.

The American Accounting Association's Committee on Concepts and Standards—Long-lived Assets puts the matter very well:

We affirm the definition in the 1957 Revision that "Assets are economic resources devoted to business purposes within a specific accounting entity; they are aggregates of service potentials available for, or beneficial to, expected operations." The notion of "service potentials" provides a sound conceptual basis for asset valuation. Rarely, however, can the economic value (the discounted value of future cash flows) of service potentials be measured in ways that meet the test of verifiable evidence stated previously. Predicting cash flows and allocating them to individual assets in the typical situation where cash flows are the result of the joint use of many assets present insurmountable difficulties.¹

Instead of discounting the estimated future cash flows of assets, it is recommended that specific current market prices of similar assets be used for asset valuations. If any asset is no longer available in the market place, then a specific index must be used to restate its net value. The use of specific current market prices or specific indexes will give values as close to values which discount future net benefits to the present as one can obtain in practice.

¹*Accounting Review*, July 1964, p. 694.

The discounting is carried out in the market place and reflects approximately the expectations of all firms operating there at any time. But it does not reflect the expectations of the individual firm which is not operating in the market place at that point of time, and therefore does not necessarily reflect the value of an asset to a firm which purchased an asset some time previously. However, any estimated differences between such current market valuations (after allowing for depreciation) and the net value of an asset to a firm can be accounted for.

Dwight R. Ladd, Professor of Business Administration, University of Western Ontario, seems to support much of the above. He says:

Replacement cost seems to be a generally suitable substitute for present value in fixed-asset accounting. It is certainly a vast improvement over historical cost which in many cases will not even closely approximate the current value of future service potential. . . . Replacement cost is far more in keeping with the contemporary view of the corporation as an on-going instrument for the production of goods and services. The importance of such an instrument lies in its capacity to produce both at present and on into the future, and a meaningful statement of the value of productive capacity it currently holds must express the cost of maintaining it.²

The American Accounting Association's Committee on Concepts and Standards—Long-lived Assets said this:

Service potential is the essential element in asset valuation. Where measurements of current service potential in terms of discounted cash flows can be supported by sufficient objective evidence, as in the case of most long-term receivables and payables, they are generally used. Whenever sufficient objective evidence is not available, or when cash flow estimates cannot be identified with specific assets, a practical approximate measurement of service potential may be attained by reference to *the current cost of securing the same or equivalent services*. . . .

Where there is an established market for assets of like kind and condition, quoted prices provide the most objective evidence of current cost. Such prices may be readily available for land, buildings, and certain types of standard equipment. Where there is no established market for assets of like kind and condition, current cost may be estimated by reference to the purchase price of assets which provide equivalent service capacity. The purchase price of such substitute assets

²*Op. cit.*, pp. 79-80.

66 Accounting for Price-level Changes—Theory and Procedures

should be adjusted for differences in operating characteristics such as cost, capacity, and quality. In other cases, adjustment of historical cost by the use of specific price indexes may provide acceptable approximations of current cost. Appraisals are acceptable only if they are based on the above methods of estimating current cost.³

The majority of members of the American Accounting Association's Committee on Concepts and Standards—Inventory Measurement “maintains that replacement cost is the best of several available inventory measurements” and that “replacement costs should be regarded as the primary basis of inventory measurement”.⁴

It is not intended to discuss the relative merits of the “current replacement cost” or the “net realizable value” methods of inventory valuation in this book as the whole question of revenue realization is involved. However, it is recommended that the “current replacement cost” method be adopted in all those cases where the “net realizable value” method is not used. Where the “net realizable value” method is used (i.e. revenues are recognized at an earlier date), then these “net realizable values” must be matched with the relative specific replacement costs which were current at the date the “net realizable values” were placed on the inventories concerned.

Holding Gains and Losses

Although there are many people today who advocate the valuing of assets at specific current market (replacement) values, there are two schools of thought concerning the treatment of the other side of the revaluation entries. This is really a continuation of the specific versus general index concept of profit question.

However, as the matter covers only a fine section of this controversial index area, a separate chapter has been devoted to it in an endeavour to make the overall presentation more clear.

³*Op. cit.*, pp. 694–695.

⁴A Discussion of Various Approaches to Inventory Measurement, *Accounting Review*, July 1964, pp. 700 and 706.

As pointed out in the previous chapter, there are some who wish to treat as profit any amount by which the specific current cost of an existing asset increases over and above any movement in the general index. Conversely, they wish to treat as a loss the amount by which the specific current cost of an existing asset decreases more than the general index, i.e. the index of all things in general.

Another way to explain this theory is to imagine that the general index remains constant while the specific index of a certain existing asset moves. There are many who would treat as a holding profit any increase in the specific current cost of an asset, and who would treat any decrease as a loss.

In the previous chapter a case was given concerning an inventory item purchased for \$100 when the general index stood at 100. Its current replacement cost rose to \$120 before it was sold, while the general index increased to only 110. Those who would have us recognize holding profits⁵ say that there is a profit of \$10 (i.e. \$120—\$110) to be recognized at this point. Their revaluation entry to do this could be:

Inventory (Asset) A/c	Dr. \$20	
Holding Profit A/c		Cr. \$10
Revaluation Reserve A/c		Cr. \$10
(Being revaluation of inventory from \$100 to \$120.)		

They would then recognize a further profit of \$30 when the item is sold subsequently for \$150. Therefore, they claim that there is a total profit of \$40 in all. This is a general index concept of profit as pointed out previously even though it is recognized in two stages. The specific index idea in this case would be to recognize a profit of \$30 only. (This does not indicate that the specific index profit is always more conservative. If the general index had risen more than the specific price in this example, then the total profit, using the general index, would have been less than that obtained by adhering to specific current prices.)

⁵And who would value inventories at current market replacement values.

While the above example concerns an inventory item, those who wish to recognize holding profits and losses would account in a similar way for fixed assets.* (Here, however, some may wish to write off the holding profit to the Profit and Loss Account over the life of the asset concerned.)

Imagine a fixed asset with a 10-year life purchased for \$10,000 and whose depreciated asset value is down to \$5000 after 5 years of use. If the specific index for this type of asset were to rise from 100 to 120 while the general index remained constant, those who want to recognize a holding profit could do so when raising the *net* asset value to \$6000 with this entry:

Fixed Asset A/c	Dr. \$2000	
Depreciation Provision A/c		Cr. \$1000
Holding Profit A/c		Cr. \$1000

(Incidentally, the cost of using this asset—depreciation—would now increase, and correctly so, from \$1000 per year to \$1200 per year.)

With both of the above examples it is agreed that the asset items should be increased in the accounting records, i.e. the inventory item from \$100 to \$120 and the fixed asset from a net figure of \$5000 (i.e. \$10,000 — depreciation provision of \$5000) to \$6000; *but* it is considered that in each case the *total* amount of the increase should be credited to a revaluation reserve and that no part of each increase should be credited to the Profit and Loss Account as a holding profit. It is considered that the total amount of each of these increases is of a capital nature, and that every part of each of these physical assets still forms part of the firm's capital irrespective of any movements in their specific cost prices. When the specific current cost of either an inventory item or a fixed asset item rises or falls, it costs more or less to be in that kind of industry. To treat any part of such a rise or fall as a profit or a loss is tantamount to looking at the rise or fall in prices through the eyes of a shareholder (or other outsider) and not from the viewpoint of the firm as a going concern.

*For example, see Sprouse and Moonitz, *op. cit.*, p. 34.

"Any gains which accrue to the firm as a result of horizontal movements, or *holding activities*, are *capital gains*. Any gains made by the firm as a result of vertical movements, or *operating activities*, are *operating profits*."⁷

For a going concern, the capital gains should be treated as part of capital and not as distributable income.

In the Hicks fashion "income can be defined as the amount that a person can consume in a given period and be as well off at the end of the period as he was at the beginning. When applied to a corporation, this means that income is that amount that the firm could pay out as interest and dividends, and be as well off as it was at the beginning of the period".⁸ If it distributes holding profits *the firm* itself will not be as well off.

On the other hand, there is no need to reduce profits by "holding losses". There is no need to restrict distributions of profits in this way for the firm *itself* to be as well off at the end of the period. If we put ourselves in the shoes of the shareholders (and not the firm), the position might be different, but we are accounting for the firm and not for the shareholders.

A better translation of the Hicks definition of profit from the viewpoint of the firm as a going concern could be this: "Profit for a firm during any period of time is the maximum amount expressed in dollars, which, if there were no additional investments during the period, could be distributed by the firm to its beneficiaries without impairing its operating capacity."

This definition is totally different from that of the American Association's Committee on Concepts and Standards—Long-lived Assets. Its definition of "total net income" which *includes* "Holding Gains and Losses" is: "The *total* net income of the period is the maximum amount which in the absence of stockholder capital transactions during the period could be distributed outside the firm without contraction of the amount of stockholder equity at the beginning of the period."⁹

⁷Edwards and Bell, *op. cit.*, p. 73.

⁸Hendriksen, E. S., *Price-level Adjustments of Financial Statements*, p. 47.

⁹*Accounting Review*, July 1964.

70 Accounting for Price-level Changes—Theory and Procedures

It is difficult to imagine how the preservation of *stockholder* equity has anything to do with the computation of total net profit for the *firm*! The committee seems to have had some doubts on this because it goes on to say that holding gains “are not distributable without contraction of operating capacity and therefore do not enter into the measurement of income from ordinary operations”.¹⁰

It is sometimes argued that a firm which buys its stocks before a rise in the specific cost price (assuming no movement in the general index) is “better off” and that the amount by which it is “better off” should be reflected in its profit statement. It is admitted that the firm is better off than it would have been if it had not purchased the merchandise until after the rise in the cost price; and it is also admitted that the firm is better off than any opposition firm which purchased its inventories after the rise in the cost price,¹¹ but is the firm better off within itself? It might be if the selling price can now be increased, and it is to the extent that it has more money in the bank than what there would have been had it delayed its purchases, but the firm is not better off from a *profit* viewpoint. The increase in the cost price did not actually put more money in the firm’s bank account, and the number of articles on the shelves did not increase! It is going to cost the higher price when the articles are replaced after sale, and the current cost of sale per unit will be at the increased price. It is going to take more capital now to run this going concern.

In his excellent paper, “Replacement Cost: Member of the Family, Welcome Guest, or Intruder?” Professor Stephan A. Zeff arrives at a different conclusion,¹² but after examining his arguments your author is more firmly convinced that all depends on whose eyes one borrows to view this problem. If the eyes of

¹⁰*Accounting Review*, July 1964, p. 607.

¹¹This would be revealed in the relative profits of those firms because the opposition firm would calculate a *loss* on the cash it held during this price rise (or it could not calculate a profit on an increased Accounts Payable item).

¹²*Accounting Review*, October 1962, p. 620.

the firm are used, the picture will seem as it has been painted in the preceding paragraph. If the eyes of shareholders or other outside members of society are used (e.g. welfare economists), then maybe holding profits and holding losses become profits and losses. However, the firm is an entity within itself and one must use the firm's eyes for the preparation of its accounting records and reports to be used by its management in the planning, control, and decision-making activities. To then tell shareholders and other outsiders a different story would be incorrect. The accounting records and reports are those of the firm and *not* those of the shareholders. Shareholders have their own sets of accounts in their own ledgers and they might choose to account for holding gains when share prices increase at the stock exchange.

Outsiders, who attempt to weigh the relative profitability of different firms on the basis of reported data, need reports which are modified to include the effects of individual price changes, not reports which incorporate simply the effects of changes in the general price level.¹³

Arthur M. Cannon,¹⁴ who was a member of the American Institute of Certified Public Accountants' Accounting Principles Board, in a paper presented to the annual meeting of the Financial Executives Institute on 26 October 1962, related this case:

The other day we made a mortgage loan for the construction of a new shopping centre in San Jose, California, a very fast growing area. The land in question was the sole asset of the owner, and he had purchased it as a farm for \$8,000 about fifteen years ago. It was currently appraised at \$300,000 and we made a mortgage loan of \$350,000 for the new construction, the total value when completed to be \$650,000. The overall [general] price level in the period the farmer held the land approximately doubled. If we accountants prepared a statement for this farmer just before the indicated transaction, we would show the asset at \$8,000 and net worth at \$8,000 (other items excluded). If we took the [general] price-level change into account, we would show the asset at \$16,000 and the net worth at the same amount. . . . After the construction and the loan are completed, a traditional accountant's statement would show the land and the buildings at \$358,000, the loan at \$350,000 and the net worth at \$8,000, and, if the [general] price-level change were recognized,

¹³Edwards and Bell, *op. cit.*, p. 17.

¹⁴Previously a Professor of Accounting at the University of Washington in Seattle, U.S.A.

72 Accounting for Price-level Changes—Theory and Procedures

then the asset would be \$366,000, the loan \$350,000, and the net worth \$16,000. . . . What is needed, of course, is to show the land at its [specific] current value, \$300,000—in which case the total assets will be \$650,000, the loan \$350,000 and net worth \$300,000. In that net worth should be reflected cost \$8,000, adjustment by reason of [general] price-level change another \$8,000, and appreciation by reason of holding in a rising market, \$284,000.¹⁵

In this case the total “net worth” of the farmer’s business is definitely \$300,000 as stated by Mr. Cannon, and none of these dollars is profit to the farmer’s *firm*. Although the appreciation in net worth “by reason of holding” can be calculated separately in this fashion for managerial information, it does not make any difference to the total of the resulting capital “net worth” figure.

The real investment by this farmer in his new firm is \$300,000 and to calculate the percentage return on his investment in future years by using a base of only \$8000, or even \$16,000, would give percentage figures which would be completely misleading.

In following years, as further appreciations (if any) in real estate values take place, the farmer’s interest in this business as revealed in his own *private* set of accounts (i.e. as the major or total shareholder) might be written up as each appreciation takes place—but this is a different matter and will be treated separately in a following chapter dealing with “Monetary Items”.

The points being made might be more clear if an example is developed about an old, large, established, city retailing company which owns its business premises. If in any year, while all prices in general remain constant, the specific value of its building increases through some non-physical factor, the company has *not* made a holding profit. It commenced the period with a building and it still has exactly the same building at the end of the year—no more and no less. It has operated in this building for many years and intends to continue doing so. Its real capital has increased, and this should be revealed in its accounts, but it would be wrong to say that profits had increased.

There have been no holding profits to the firm itself. Its real capital investment *within* itself has increased. There might be a

¹⁵*Journal of Accounting Research*, Spring, 1963, p. 57.

profit to the shareholders if an immediate company liquidation were to take place; or there might be a profit of a kind to shareholders if the appreciation in the value of the building is reflected somehow in the market price of their shares—but that is all.

Further, if a holding profit is recognized, the ratio of total profits (operating plus holding) to total capital could give a misleading impression. It could give the idea that it is worthwhile to continue in the retailing business when the operating profits from the retailing function might be poor.

In their excellent book, *The Theory and Measurement of Business Income*,¹⁶ Professors Edwards and Bell strongly advocate the adoption of a "business profit" consisting of (a) current operating profit—the excess over a period, of the current value of output sold over the current cost of the related inputs, and (b) realizable cost savings—the increase in the current cost of assets while held by the firm during the fiscal period.¹⁷

This, of course, consists of the specific current cost profit advocated in this work, *plus* "holding profits". Professors Edwards and Bell, however, do stress that these two components be recorded and reported separately in order to prevent misconceptions.

Advantages of their "business profit", they say, are that

the managerial evaluation of expectations is facilitated because gains of one period are recorded in that period and gains from holding activities are sharply distinguished from current operating profit. Data are available for reporting current values on the balance sheet, making this report of greater significance to financial analysts, owners and the public. It would also provide better raw data for measuring the nation's stock of wealth.¹⁸

It will be noticed that these advantages also apply to the recommendations in this book. Holding gains *are* reported in the period in which they occur—but they are treated as increases in capital and not increases in profit.

¹⁶University of California Press, 1961.

¹⁷*Ibid.*, p. 115.

¹⁸*Ibid.*, p. 120.

Holding Losses Specifically

Whilst many agree with the contention that the holding *gains* of a going concern should be treated as increases in capital reserves and not as profits, a few then balk at the idea of treating holding losses as decreases in capital reserves and not as losses! For a theory about the treatment of “holding gains” to be a good one, it must also apply in reverse, i.e. to “holding losses”.

If, through technological or other improvements in production methods (for example), the specific costs of inventory items held by a firm decrease, there is a reduction in capital and the write down in inventory values should be debited to a revaluation reserve. (It is not suggested here that the existing inventory items have become obsolete in any way.) The facts of the matter are that it now takes less capital to be in this kind of business. To treat the write down as a loss against profits could seriously understate the profits *of the firm* for the period.

Similarly, if technological or other improvements in production methods of any fixed asset items owned by a company cause a lowering in the specific indexes or costs of those fixed asset items, there is a capital loss. The real capital investment in the company is reduced and this will be shown only if there is a corresponding reduction in a revaluation reserve account. If no such account balance exists it will be necessary to debit a capital adjustment account of some kind. It has been assumed that there has been no reduction in the general index (or consumer price index), so it will be desirable to maintain dividend cheques of the same size as previously, but this is a different problem. It now takes less capital to be in this sort of business, and the shareholders could have been unlucky in their investment decisions.

It can be seen that technological changes in production methods, to the extent that they cause a lowering in the specific costs or indexes of existing items, can be, to some degree, an offsetting factor to the continuously rising prices of modern society with its full employment aims. But this does not matter. The specific current cost or index will be some sort of an average of these technological factors and the supply and demand forces.

In his book, Professor Hendriksen says:

There is a distinct difference between the adjustment for changes in replacement costs or purchasing power and an adjustment for productivity (technological) changes. Each should be considered separately on its own merits. Replacement cost refers to the current cost of acquiring an asset similar to that in use.¹⁹

He agrees that "at present there appears to be no consistent and reliable method of adjusting cost for productivity gains",²⁰ but whether this is so or not, it is contended that there is no need to attempt to separate out the effect of technological changes. The narrower the specific index the better, and there seems to be no valid reason for looking for the reasons why the specific index moves. It does not matter if moves are caused by technological improvements, or pure supply and demand factors. As far as *the firm* is concerned, the specific index has moved, and this causes a similar movement in the current costs of using up the assets affected.

In a later chapter dealing with the Philips Electrical people, it will be seen that they make certain adjustments in respect of technological changes, and this matter will be discussed again at that point.

What if Inventories Are Valued at Net Selling Prices?

As the American Institute of Certified Public Accountants' Accounting Research Study No. 3 recommends that "inventories which are readily salable at known prices with readily predictable costs of disposal should be recorded at net realizable value, and the related revenue taken up at the same time",²¹ it is possible that this procedure will be adopted in more cases in the future. This practice of valuing inventories at net selling prices is already quite common in many of the primary and contracting industries, and although it cuts against the conventional concept of realization

¹⁹*Price-level Adjustments of Financial Statements*, p. 109.

²⁰*Ibid.*, p. 111.

²¹Sprouse and Moonitz, *op. cit.*, p. 57.

of revenue at point of sale, it does value stocks at a figure which is close to the present value of the future benefits they will bring—and this conforms to many peoples' idea of the value of an asset.

To value inventories at net selling values requires revenues (and hence profit) to be realized on the production of an article, or on receipt of a firm order from a customer, or on the mere placing of bought-in items on the shelves in a salable condition.

The profit figure in such cases would be the difference between the net selling values adopted and the specific costs of the inventory items current at that time. Any subsequent increases in the specific costs of producing or buying which occur *before* the goods are sold must result in a reduction of profit (already realized) and an increase in capital reserves. If this entry is not made, the capital of the company will not be able to support carrying the same volume of stocks. (Any reductions in the specific costs of the goods would be treated in an opposite manner.) Those who recognize "holding gains and losses" would not want to make this entry *if* the general index had remained constant (or to the extent that the general index did not move at the same rate as the specific costs of the goods in question), and they would not then be producing true profit for the firm itself.

Any subsequent increases (or decreases) in the *selling* prices of the goods before sale would result in increases (or decreases) in the profit *already* realized.

The recommendations concerning the capitalizing of holding gains and losses do not apply to accretion.

Accretion, such as the natural increase of flocks or the growth of standing timber, is definitely a real profit item and not "holding gains" as such. With accretion there is an actual *physical* increase in inventories, or an increase in their *physical* qualities (as with spirits). The inventory values in these cases are usually based on net selling values.

Evergreens . . . can be sold at almost any age at the going market price and consequently the realizable value of a stock of growing trees can be estimated with some degree of accuracy at any particular date.

This condition affords some defence for the practice, occasionally encountered, of inventorying certain classes of nursery stock at current selling price less the estimated cost of digging, wrapping, and delivery. Similarly, the natural increase of a flock of sheep or other type of live-stock represents a highly marketable asset and thus has one of the attributes of recognizable revenue.²²

The "Good Buy"

It might appear from what has been written already in this chapter that no recognition will be given to the purchasing officer who makes a "good buy" at a bargain price.

Professor Hendriksen was concerned about this when he said:

Only if the specific assets are acquired in a perfect market and if the replacement values are obtained from the same market would there be an approximation of changes in specific purchasing power. If a perfect market is not available, gains and losses may arise from the favorable or unfavorable acquisition prices obtained by the firm. . . . An adjustment for changes in general or specific purchasing power by the use of current replacement values would not permit these gains and losses to be included in net income. Instead, all adjustments from historical cost to replacement values would be included in the restatement of the asset and the related restatement of stockholders' equity.²³

In the section in the last chapter headed, "How Specific Should the Specific Indexes Be?" it was stated that temporary, abnormal prices should not be used for the restating of past costs in current terms and that the principles which apply in a system of standard costs, based on normal, current conditions should apply. In such a system it is possible for buying variances to occur. The "good buy" at a bargain price results in a credit buying variance, and this variance should always be used to increase profits.

It is now claimed that these principles should apply in any kind of industry. Inventories should be brought in at normal, current, specific prices, and any significant differences between these and actual cost prices should be treated as profits or losses immediately. If this is done, Professor Hendriksen's fears are overcome, and the "good buy" gets its rightful recognition.

²²Paton, W. A. and Littleton, A. C., *An Introduction to Corporate Accounting Standards* (American Accounting Association, 1940), p. 52.

²³*Accounting Review*, July 1963, p. 488.

It must be remembered that “profit is attributable to the whole process of business activity”,²⁴ and buying is one of them.

However, when the normal current market prices change, the normal current standards must change too. Inventories on hand must be revalued at the new normal current market price and the other side of the entry affects capital, i.e. through a revaluation reserve account. Future buying efforts will be measured against the new standards, and any necessary profit or loss variances created accordingly.

The Private Speculator

This is a person (or firm) who tries to buy certain commodities before a rise in their price, and who then sells at a later date when prices are much higher. It might appear from what has been recommended in this chapter that this speculator would never realize any profits as he must match specific costs, current at the time of resale against his selling prices—and these would in most cases be close to being the one and same thing. The speculator’s activities are a series of ventures in commodities which, in many or most cases, are much different in nature.

The *individual* speculator does not have a set pattern or set of objects other than the increasing of his consumption purchasing power, and to the extent he does he has made a profit. Each venture is liquidated when the sale is made and there is no real going concern as such. On liquidation of each venture, the total proceeds are returned by his business entity to the speculator as a private individual. In his private set of books, the speculator has made a profit to the extent that the liquidation proceeds exceed the original investment in the venture—adjusted for any movement in the consumers’ price index. He might then (or at a later date) reinvest a similar amount, or more, or less, in a further venture, but this will be another separate entity with a different capital structure. That he might have more than one venture in operation at the one time does not alter the situation.

²⁴Sprouse and Moonitz, *op. cit.*, p. 55.

It is difficult to find the dividing line between the private affairs of a speculator and his business entity, and this might not assist in recognizing the essential difference between this type of business and the going concern for whom the bulk of this chapter has been written.

The *firm or company speculator* might have more permanence and could be in fact a going concern which indulges slightly or substantially in speculating activities. There is a very close connection between the holding by a going concern of assets in the form of cash, speculative shares, and speculative inventories. Therefore, it is proposed to continue this discussion in the chapter on monetary assets, i.e. after certain other matters have been developed.

Conclusion

It has been claimed in this chapter that "holding gains and losses" must be treated as capital items and not as items affecting profits. In this respect there is a vital difference between these proposals and those contained in both (a) *The Theory and Measurement of Business Income* by Professors Edwards and Bell,²⁵ and in (b) *A Tentative Set of Broad Accounting Principles for Business Enterprises* (Accounting Research Study No. 3) by Professors Sprouse and Moonitz.²⁶ Like all general index ideas, their proposals look on the firm from the outside and not from the inside.

However, their method of realization for their concept of overall business profit is far superior to that of other general index proposals. Others have ignored completely the specific price movements of individual assets, thus making the accounting records and reports of little use to management. As Professors Edwards and Bell say:

The fundamental purpose to be served by accounting data is the evaluation of business decisions, it is the correction for individual price changes that is most urgently needed. In our judgment, therefore, the

²⁵University of California Press, 1961.

²⁶American Institute of Certified Public Accountants, New York, 1962.

80 Accounting for Price-level Changes—Theory and Procedures

emphasis in recent years on the adjustment of historic cost values for (general) price level changes has been misplaced. An adjustment for changes in the general price level is of considerable importance . . . but unless an adjustment is also made for individual price changes, the advantage of the price level adjustment is questionable.²⁷

If, despite what has been said in this and the previous chapter, readers are convinced that a general index form of profit is the correct one, then, for practical reasons, methods similar to those outlined by Professors Edwards and Bell in their book should be adopted if accounting is going to render management any day-by-day assistance in planning, controlling, and decision-making.²⁸

It is a little disappointing therefore to find that methods similar to those have not been developed further in the American Institute of Certified Public Accountants' Accounting Research Study No. 6²⁹ which seems to have concentrated on annual reporting. It also adheres strictly to a general index for *all* purposes and so, in some ways, contradicts Accounting Research Study No. 3 which seemed to herald better things.

However, for those who still want to produce a general index concept of profit in the accounting system, it is believed that practical difficulties will prevent them from using the methods outlined by Edwards and Bell in day-by-day accounting procedures.

It is believed that it will be impossible to account for the difference between (a) movements in the various specific prices and indexes, and (b) movements in the general index, when revaluing individual fixed asset and inventory items from time to time. The only practical way for these people to operate will be to account in the ways recommended in this book, i.e. by making all revaluations against a capital reserve or capital

²⁷*Op. cit.*, pp. 279–280.

²⁸Eldon S. Hendriksen, in his book *Price-level Adjustments of Financial Statements*, and Cecilia Tierney in Appendix A of A.I.C.P.A. Accounting Research Study No. 6 examine in a thorough fashion the suitability of various "general" price indexes available in the United States of America. Cecilia Tierney also outlines some of the problems involved in index number construction and their implications for accounting records and statements.

²⁹*Reporting the Financial Effects of Price-level Changes*, New York, 1963.

adjustment account, and then every month, quarter or year, adjusting profit by the amount that the total of such transfers to this capital reserve or adjustment account exceeds or falls short of the general index movement for the period applied to the total of shareholders' funds at the beginning of the period (allowing, of course, for any capital raisings during the period). The other side of this entry would be to the Profit and Loss Account and this would be the recognition of "holding gains and losses" for those with a general index concept of profit, i.e. for those with a proprietorship outlook.

For example, if in any period the additions to the capital reserve or adjustment account caused by specific price or index increases fell short of the general index increase for the period applied to the opening balance of shareholders' funds for the period, then those with a general index concept of profit and capital would want to increase the capital reserves by this difference, while at the same time reducing the profit figure by the same amount, i.e. the amount of the "holding loss".

However, while your author sees no harm in applying the general index movement to the opening balance of shareholders' funds, he believes that any further transfers to reserves in addition to those which resulted from specific price or index movements during the period must be treated as an allocation of profit from the Profit and Loss Appropriation Account. *Any such further transfers have nothing to do with the determining of profit itself. Such attempts to protect shareholders' funds are financing problems only.*

This now concludes the discussions on the theoretical background to the specific index and costs approach that will be used in the various practical applications in the following chapters.

CHAPTER 9

COSTS OF GOODS SOLD AND INVENTORIES

IN THE previous two chapters, reasons for adopting a specific index or current specific costs approach to the problem of accounting for changing price levels were given. It was necessary that this be done before proceeding to use such an approach for demonstrating and explaining ways of accounting for costs of goods sold and inventories when costs are rising or falling.

The reasons for having to adjust these items were discussed in Chapters 3 and 4, and example 2 in Chapter 4 showed in an elementary way how conventional costs of goods sold are understated when prices are rising (and hence profits tend to be *overstated*). Example 4 demonstrated one of the dangers of not having assets (including inventories) in the balance sheet at current values, and in this respect these words by Professor Mason are worth repeating:

The balance sheet also suffers from lack of comparability of the various items. Cash and receivables and the unpaid liabilities are expressed in current dollars, but the inventories and especially the plant and equipment are collections of non-comparable items since they are almost always a hodge-podge of various past-period dollars.¹

Many writers on this subject have confined their thinking to fixed assets and the depreciation on fixed assets, and have overlooked the importance of adjusting the costs of goods sold and inventories. The quick turnover of inventories as compared

¹*Price-level Changes and Financial Statements—Basic Concepts and Methods*, p. 11.

with that of most fixed asset items seems to have been the reason for this. Whilst this quicker turnover might mean that the historical cost of inventories remaining at balance-sheet date is closer to current costs than that of a 10-year-old fixed asset, it does not necessarily mean that the annual depreciation figure needs adjusting by more than the costs of goods sold figure, i.e. in order to bring them to current costs. The empirical work of Professors Mathews and Grant has proved this conclusively,² and the following example is designed to demonstrate the point.

Suppose a company purchased its fixed assets 8 years ago for \$120,000 and that the relative current costs have now increased by 100%. With depreciation at 10% p.a. (= \$12,000 p.a.) an adjustment of approximately \$12,000 would be needed to bring depreciation costs up to current costs.

Let us now suppose that the same company carries average inventories of \$100,000 (which seems fair enough) and that these are held for a month and then sold (i.e. another lot of \$100,000 are then purchased each month). If the relative prices of these inventories had risen fairly evenly throughout the year by 12% (this is almost equal to the average yearly rise in fixed assets too), then each *month's* costs of sales would need adjusting by adding approximately 1% in order to bring them up to current costs.

This would give an adjustment of \$1000 (1% of \$100,000) for each month, and \$12,000 for the year,^{2a} i.e. the *same* adjustment as for the depreciation on fixed assets.

Incidentally, if the inventories of \$100,000 had been held for a whole year before sale, the adjustment necessary to bring costs of sales up to current costs would be the same, i.e. 12% of \$100,000, or \$12,000. This proves that the speed of turnover of the inventories or fixed assets does not enter into the size of the necessary adjustment. Most depends on the amount invested in

²*Inflation and Company Finance*, Sydney, 1958.

^{2a}In order to avoid complicated calculations, this assumes a slightly decreasing *volume* of articles sold.

84 *Accounting for Price-level Changes—Theory and Procedures*

the asset concerned during the period of changing prices, i.e. the asset which is subsequently sold or used up.

In this chapter, ways of arriving at the specific current costs of goods sold for the profit statement, and ways of arriving at the specific current costs of inventories for the balance sheet, i.e. when prices are changing, will be developed.

The practical procedures necessary will be discussed for:

- (a) wholesale and retail firms which maintain perpetual inventory systems,
- (b) manufacturing firms which maintain perpetual inventory systems,
- (c) retail and wholesale firms which use retail inventory methods, and
- (d) those firms which rely on periodical physical stocktakes in order to provide the necessary stock figures for profit determination and balance-sheet purposes.

(a) Wholesale and Retail Firms Using Perpetual Inventory Systems

Many wholesale firms and some retail firms use perpetual inventory systems. Individual stock records are kept for each item of stock handled (i.e. by hand, machine, punched cards or computers) in such a way, that quantities on hand, and also values in most cases, for each item are known on a day-by-day basis. These stock records form subsidiary ledgers for which the relative control accounts are kept in the general ledger. The control accounts, in turn, show the total values of stocks on hand.

This form of accounting, whilst more detailed in itself, makes the adjusting for the effects of changing price levels a fairly simple matter.

If a wholesale or retail company learns, e.g. by letter or by an altered printed price list, etc., that the specific cost price of a line

carried has been increased from say \$10 to \$12 each, and there are 1000 items on hand on its shelves, then it is necessary to (assuming stocks are kept at cost)

- (a) adjust the values in the individual stock records (e.g. stock cards) by adding on \$2000 (i.e. $1000 \times \$2$), and
- (b) make the following journal entry for posting to the accounts in the general ledger:

Inventories Control A/c (or similar)	Dr. \$2000
Inventories Revaluation Reserve A/c	Cr. \$2000
(Being increase in current value of stocks on hand.)	

As pointed out in the last chapter, this is not profit but an increase in the capital necessary to operate the firm.

There is no need to open a separate control account to take care of the increases or decreases in the value of inventories on hand. To do so would only duplicate the physical accounting effort for no good purpose. There is no need to perpetuate the original historic cost of each inventory item in the accounting records. Once it has been superseded it is no longer relevant for profit determination, balance sheet presentation, planning or decision-making.^{2b} The duplication of effort, especially, as will be seen, in the case of a manufacturer, would be tremendous, and a waste.

In the example above, every item which is sold after the revaluation would be charged out of the perpetual inventory system to costs of goods sold at \$12 each and not \$10 each. In this way current costs would be charged against revenues, and profits would not be overstated.³ Further, the balance of

^{2b}It might be necessary for taxation purposes, but calculations should be possible once per year, i.e. to convert the cost of sales figure to historical costs, without this duplication of effort.

³If the specific price of the item had fallen to \$8 in this example instead of rising to \$12, then the control account would have been written down by \$2000 and future revenues would have been charged with only \$8 per item sold. In this way profits would not have been *understated*.

inventories on hand for balance-sheet purposes, for the calculation of return on capital, etc., would always be at current cost and would thus assist greatly in giving both management and outsiders a true picture of the situation of the firm.

As has been said, the keeping of perpetual inventory records greatly simplifies the matter of adjusting costs of goods sold figures and inventory balance figures in times of changing prices.

It is important to notice at this stage that if no further adjustments are made, the total costs of goods sold figure for an accounting period, e.g. a year, will be at the *average* current costs for the year. That is, the costs of goods sold in July will be at costs current in July, those for October will be at costs current in October, etc. The total figure for the year will (without further adjustment) be at an average of the costs applying during all months of the year. This is not unusual. The sales total will also be at the average selling prices applying during the year. Without further adjustment, therefore, the determination of profit will take place by matching the sales for the year, at average current selling prices, with the costs of goods sold for the year, at average current cost prices and *not* with a costs of goods sold figure based on out-of-date historical cost prices).

Later in this work, the matter of expressing sales, costs of goods sold, other expenses, and net profit figures for a period, in dollars which are current as at the *end* of the period, will be considered.

However, the final inventory figures in the method described above will be in costs current at the end of the accounting period, i.e. for balance-sheet purposes, etc.

(b) Manufacturing Firms Using Perpetual Inventory Systems

Most manufacturing firms use perpetual inventory systems to control their investments in raw materials, work in process and finished goods. Separate control accounts and subsidiary ledgers for these three types of inventories are usually maintained.

If a manufacturer is advised of an alteration in the current cost of a raw material item, the records for each of these three types of inventories will need altering in most cases. It would be necessary to ascertain (i) the quantity of this item in the raw material store, (ii) the quantity in work in process on the production line, and (iii) the quantity contained in the finished goods awaiting sale in the finished goods store. Assuming an *increase* in the cost per item of the raw material in question, the journal entry to be raised for posting to the control accounts would be:

Raw Materials Control A/c	Dr.
Materials in Process Control A/c	Dr.
Finished Goods Control A/c	Dr.
Inventories Revaluation Reserve A/c	Cr.

(Being increase in current value of stocks on hand.)

Here again this is an increase in capital and not a recognition of profit.

The values on the individual stock records in the subsidiary ledgers for (i) raw materials, (ii) job or process costs, and (iii) finished goods would have to be written up, too.

Thereafter, only current costs would be included in every raw material item which is charged to production, in every unit which is completed and placed in the finished goods store, and in every charge made to the Costs of Goods Sold Account as items are sold and delivered from the finished goods store. This would occur automatically. Further, the control accounts in the general ledger for raw materials, materials in process, and finished goods would always be in current costs.

If a manufacturer is informed of a change in the rates under the wage awards for his factory employees, it will be necessary for him to alter his control accounts and subsidiary ledgers for work in process and finished goods. His current costs of work produced have altered and it is necessary that this be reflected in the accounts immediately. Assuming, once more, an increase in the wage

rates, the journal entry for posting to the control accounts would be:

Labour in Process Control A/c	Dr.
Finished Goods Control A/c	Dr.
Inventories Revaluation Reserve A/c	Cr.

(Being increase in current value of stocks on hand.)

Once more the values on the individual stock records in the subsidiary ledgers for (i) job or process costs, and (ii) finished goods, would have to be written up. Here again only current costs would then be matched against revenues when future finished articles are sold.

Where there is a change in the current costs of indirect manufacturing expense items being absorbed into product costs, similar entries must be processed.

As with the wholesaler or retailer using perpetual inventory systems, the manufacturer's task is not as difficult as it would be in times of changing prices if such records were not available. Where the manufacturer is using a standard cost system, with a standard cost card for each article produced, the recording process for each significant change in the current costs of the various cost elements is made much easier. With a standard cost system, the standard content of each product as regards materials, labour hours, etc., is known, thus reducing any necessary accounting adjustments for changes in current costs to a simple clerical process.

The word "significant" is used above as it is not intended that *insignificant* changes in current costs should result in much clerical work being carried out in this way. Such insignificant changes in current costs could be merely noted until alterations are being carried out for cost changes which are significant.

As with the wholesale and retail case in (a) above, the costs of goods sold figures produced in the way recommended here will, if no further adjustments are carried out, be an average of the current costs for the accounting period concerned, and inventory balances will be in end of period costs.

(c) Retail and Wholesale Firms Using Retail Inventory Methods

The retail inventory method is used by many retail and wholesale firms for control purposes and in order to permit the preparation of monthly profit statements for the firm as a whole and for each department within the concern.

Any retail or wholesale firm which does not use a perpetual inventory system for stock recording should be using a type of retail inventory method for controlling stocks, department by department, and month by month.

It is unfortunate that the majority of firms which find it impracticable or not economical to maintain a perpetual inventory control of stocks resort to the periodic physical stocktake instead of instituting a form of the retail inventory method. As the physical count of stock can take place only once or twice per year, the control of this item and the preparation of financial statements is then limited to once or twice per year also.

A retail inventory system does not eliminate the need for a periodic stocktake in order to check the running totals in the retail inventory controls, but, of course, it is also necessary to have physical stocktakes from time to time in order to check the accuracy of the detailed information in a *perpetual* inventory system.

When prices are changing it becomes more important that all retail or wholesale firms use either the perpetual or retail inventory methods for stock control and the monthly preparation of financial reports. When the determination of profit is dependent on an annual physical stocktake, it can be difficult to calculate with a high degree of accuracy the size of the adjustment that must be made to the costs of goods sold figure. This will be evident from (d) below.

If some of the largest retail organizations find it possible to maintain retail inventory systems, then it must be possible for smaller organizations to do so, too. The little extra effort and recording necessary would be more than offset by the benefits of the monthly control and profit data provided.

90 Accounting for Price-level Changes—Theory and Procedures

The following is an example of a retail inventory control for a department of a retail store for a month:

Example 1

SPORTS DEPARTMENT—FEBRUARY 19...

	Cost \$	Retail \$	% of cost to retail
1. Opening stock	3000	5000	
2. Purchases	4000	6000	
3. Additional markups	—	200	
4. Other adjustments	—	—	
5. Totals	\$7000	\$11200	62.5%
6. Net sales		7500	
7. Markdowns—on items sold		600	
8. Employee discounts		300	
9. Total deductions (cost of sales @ 62.5% of retail)	\$5250	\$8400	
10. Closing stock	\$1750	\$2800	

It follows that the gross profit for the month would be reported as:

	\$	%
Net sales	7500	100
— Cost of sales	5250	70
= <i>Gross profit</i>	\$2250	30

and that the inventory figure for the balance sheet at the end of February would be \$1750.

Any changes in the specific current costs of items *on hand* at any time must be recorded in a way similar to the recording of additional markups and markdowns, i.e. in the departments concerned. Such changes must be incorporated in the retail inventory records if they occur.

For example, suppose that the specific current costs of all of the stock items on hand at the middle of the month in the above illustration had increased by 10% sometime after the month's purchases had been received and invoiced—and that no further markups in selling prices were considered possible at this stage.

This increase in costs (say 10% on \$3500) would be recorded on line 4 as follows:

Example 2

SPORTS DEPARTMENT—FEBRUARY 19...

	Cost	Retail	% of cost to retail
	\$	\$	
1. Opening stock	3000	5000	
2. Purchases	4000	6000	
3. Additional markups	—	200	
4. Other adjustments (10% of \$3500)	350	—	
5. Totals	<u>\$7350</u>	<u>\$11200</u>	65.625%
6. Net sales		7500	
7. Markdowns—on items sold		600	
8. Employee discounts		300	
9. Total deductions (cost of sales @ 65.625% of retail)	<u>\$5513</u>	<u>\$8400</u>	
10. Closing stock	<u>\$1837</u>	<u>\$2800</u>	

The gross profit for the month would then be:

	\$	%
Net sales	7500	100
— Cost of sales	5513	73.5
= <i>Gross profit</i>	<u>\$1987</u>	<u>26.5</u>

and the inventory figure for the balance sheet would be \$1837.

92 Accounting for Price-level Changes—Theory and Procedures

The adjustments to costs would be obtained on departmental returns in a way similar to obtaining figures for “Additional Markups” and “Markdowns” in normal practice.

From the above two illustrations it is now possible to compare the real results for the month of February with those that would have been reported if the adjustments for the increase in costs had not been taken into account.

	Adjusted	Unadjusted
Gross profit	\$1987 (26.5%)	\$2250 (30%)
Closing stock	\$1837	\$1750

Profits would have been overstated by \$263 (through the understating of costs of sales), and the final inventory would have been understated by \$87, if the adjustments for the increase in current costs had *not* been made.

The reports prepared at the end of February would show the results for February itself, i.e. a gross profit of \$1987, and would also show the cumulative figures for the (say) eight months up to the end of February. The gross profit figure for the eight-month period would be the total gross profit figure for the seven months to the end of January plus the \$1987 figure for February.

All of this should be built into the controls in the general ledger where an Inventories Control Account and a Costs of Goods Sold Account should be maintained. The adjustment of \$350 would then be the subject of the same journal entry as that used with a perpetual inventory system, i.e.

Inventories Control A/c	Dr. \$350	
Inventories Revaluation Reserve A/c		Cr. \$350
(Being increase in current values of stocks on hand.)		

The relative ledger accounts as at the end of February for Example 2 would be:

INVENTORIES CONTROL A/C (SPORTS DEPT.)			
	\$		\$
Opening balance	3000	Costs of goods sold	5513
Purchases	4000	Closing balance	1837
Revaluation reserve	350		
	<u>7350</u>		<u>7350</u>

COSTS OF GOODS SOLD A/C (SPORTS DEPT.)

	\$
Opening balance (say)	40000
Inventories control	5513
	\$45513

SALES A/C (SPORTS DEPT.)

	\$
Opening balance (say)	60000
Accounts receivable	7500
	\$67500

INVENTORIES REVALUATION RESERVE A/C

	\$
Opening balance (say)	2000
Inventories control	350
	\$2350

It can be seen that the cumulative costs of goods sold figure will be at *average* current costs for the whole period in the same way as the costs of goods sold figures produced with the perpetual inventory methods were.

Any adjustments made necessary by a physical stocktake, say at the end of the twelve-month period, could be made to the Inventories Control Account, with the other side of the entry being treated as an additional costs of goods sold item, or as a profit and loss item, depending on circumstances in each case.

**(d) Wholesale and Retail Firms Relying on
Periodical Stocktakes**

When, despite what has been said above, perpetual inventory systems or retail inventory systems are *not* to be used, the physical stocktake is necessary if a profit statement or a balance sheet is to be prepared. The stock on hand at the end of the period must be counted physically and valued in order to determine (a) the

94 Accounting for Price-level Changes—Theory and Procedures

cost of goods sold figure, and (b) the inventory figure for the balance sheet. Sampling methods can be of much assistance in this direction, but this does not affect the principles to be discussed here.

When the physical stocktake method is resorted to, then, in times of changing prices,

- (i) the stock sheets must be valued at cost prices current at that date (i.e. as at the *end* of the period) for balance sheet and control purposes, and
- (ii) the costs of goods sold figure must be calculated in the average current costs for the period concerned.

Obviously, it is not difficult to value stock sheets at costs current at the date of taking stocks, but the calculation (or estimation) of costs of goods sold in average current costs for the period can be difficult.

To calculate the costs of goods sold in current costs *with perfect accuracy* requires the recording of the current cost of every item sold on the date of its sale. However, this can be done only with the aid of a perpetual inventory system, and with continued *near* accuracy when the retail inventory method is used.

Therefore, the *best possible* practical methods for arriving at the average current costs of goods sold when physical stocktakes *are* resorted to in times of changing prices must be used if possible.

Professors Mathews and Grant have suggested a simple method in which the adjustment required to transform conventional costs of goods sold to costs of goods sold in average current prices “may be measured by the difference between opening stocks valued at original prices and opening stocks valued at current prices”.⁴ An example of the operation of this method is as follows.

⁴*Op. cit.*, p. 48. See also pp. 13–16.

Example 3

TRADING STATEMENT FOR A YEAR ENDED 31 DECEMBER				
Sales			\$	\$
Mar. 31	100 @ \$20		2000	
June 30	100 @ \$20		2000	
Sept. 30	100 @ \$20		2000	
			<hr/>	6000
Costs of Goods Sold				
Jan. 1	Opening stock	100 @ \$10	1000	
Mar. 31	Purchases	100 @ \$11	1100	
June 30	Purchases	100 @ \$12	1200	
Sept. 30	Purchases	100 @ \$13	1300	
			<hr/>	
			4600	
Dec. 31	Less closing stock at prices current at that date: 100 @ \$14		1400	
			<hr/>	
			3200	
Dec. 31	Plus adjustment: difference between opening stocks @ original prices and @ current prices			
	100 @ (\$14—\$10)		400	3600
			<hr/>	<hr/>
	Gross profit			\$2400

If the adjustment had *not* been made, costs of goods sold would have been only \$3200, and gross profit would have been overstated by \$400 at \$2800.⁵ The firm started the period with 100 stock units and completed the period with 100 stock units. The increase in inventory values of \$400 (i.e. 100 @ \$4) should not form part of profits.

The journal entry to record this adjustment of \$400 after its calculation would be:

Cost of Sales A/c	Dr. \$400	
Inventories Revaluation Reserve A/c		Cr. \$400
(Being revaluation of stocks held during price rises throughout the year.)		

⁵If the closing stock had been valued at the first in, first out unit cost of \$13 each, its value would be \$1300, the adjustment would be \$300, and the gross profit would still be \$2400. This is the strict Mathews and Grant idea. Using final current prices is the author's modification.

96 Accounting for Price-level Changes—Theory and Procedures

In order to complete the picture, the Costs of Goods Sold Account and the Inventories Revaluation Reserve Account in the general ledger are also given:

COSTS OF GOODS SOLD A/c					
Jan. 1	Opening balance	\$	Dec. 31	Closing balance	\$
	stock	1000		of stock	1400
Mar. 31	Purchases	1100			
June 30	Purchases	1200	Dec. 31	Costs of goods	
Sept. 30	Purchases	1300		sold for the year	
Dec. 31	Inventories			transferred to	
	revaluation			the Profit and Loss	
	reserve	400		Account	3600
		\$5000			\$5000

INVENTORIES REVALUATION RESERVE A/c			
		Dec. 31	\$
		Costs of goods	
		sold	\$400

The result above is exactly the same as that which would have been obtained if a perpetual inventory system had been in use. This is proved by the following example of such a system using the same figures:

Example 4

STOCK CONTROL A/c					
Jan. 1	Opening balance	\$	Mar. 31	Costs of goods sold	\$
	100 @ \$10	1000		100 @ \$11	1100
Mar. 1	Revaluation		June 30	Costs of goods sold	
	100 @ \$1	100		100 @ \$12	1200
Mar. 31	Purchases		Sept. 30	Costs of goods sold	
	100 @ \$11	1100		100 @ \$13	1300
June 1	Revaluation		Dec. 31	Closing balance	
	100 @ \$1	100		100 @ \$14	1400
June 30	Purchases				
	100 @ \$12	1200			
Sept. 1	Revaluation				
	100 @ \$1	100			
Sept. 30	Purchases				
	100 @ \$13	1300			
Dec. 1	Revaluation				
	100 @ \$1	100			
		\$5000			\$5000

COSTS OF GOODS SOLD A/C				
		\$		\$
Mar. 31	Stock control	1100	Dec. 31	Costs of goods sold
June 30	Stock control	1200		for the year trans-
Sept. 30	Stock control	1300		ferred to the Profit
				and Loss A/c
		\$3600		3600
				\$3600
INVENTORIES REVALUATION RESERVE A/C				
				\$
	Mar. 1	Stock control		100
	June 1	Stock control		100
	Sept. 1	Stock control		100
	Dec. 1	Stock control		100
				\$400

In the above example it is assumed that the current price of the stock item increased one month before the next purchase was made in each case. It will be seen that the closing stock, costs of goods sold, and inventories revaluation reserve figures are identical in examples 3 and 4.

Further, the costs of goods sold figure of \$3600 represents the *average* current costs of purchases for the year. Purchases in quantities of 100 units were made at \$11, \$12 and \$13. The average is \$12, which, multiplied by the 300 units sold, gives the \$3600 costs of goods sold figure. However, without the adjustment of \$400, this figure of \$3600 would not have been possible.

Does this mean then that the simple method proposed by Professors Mathews and Grant solves this problem of adjusting the costs of goods sold figure when physical stocktakes are resorted to? It does not, and they did not suppose that it did.⁶ Their simple method is accurate only if there are no physical changes in stock levels during the period. Their method "will understate the required stock appreciation adjustment (and overstate current income) if physical quantities of stock have been increased during the period; and will have the reverse effect if they have been reduced".⁷

⁶*Op. cit.*, p. 13.

⁷Nichols, W. E., *Australian Accountant*, September 1961, p. 510.

98 *Accounting for Price-level Changes—Theory and Procedures*

To examine this, an example involving *increasing* physical quantities of stocks throughout the year will be studied in order to see if the simple Mathews and Grant method does “understate the required stock appreciation adjustment”.

An illustration similar to that in examples 3 and 4 above will be used. The only alteration will be to alter the purchase transactions for March, June and September from 100 units each to 120, 140 and 160 units respectively. This then gives the increasing stock quantities.

Ledger accounts as for a perpetual inventory system will be compiled first in order to ascertain what the accurate adjustment should be.

Example 5

STOCK CONTROL A/c					
\$			\$		
Jan. 1	Opening balance		Mar. 31	Costs of goods sold	
	100 @ \$10	1000		100 @ \$11	1100
Mar. 1	Revaluation		June 30	Costs of goods sold	
	100 @ \$1	100		100 @ \$12	1200
Mar. 31	Purchases		Sept. 30	Costs of goods sold	
	120 @ \$11	1320		100 @ \$13	1300
June 1	Revaluation		Dec. 31	Closing balance	
	120 @ \$1	120		220 @ \$14	3080
June 30	Purchases				
	140 @ \$12	1680			
Sept. 1	Revaluation				
	160 @ \$1	160			
Sept. 30	Purchases				
	160 @ \$13	2080			
Dec. 1	Revaluation				
	220 @ \$1	220			
		\$6680			\$6680

INVENTORIES	REVALUATION	RESERVE A/c		
		Mar. 1	Stock control	100
		June 1	Stock control	120
		Sept. 1	Stock control	160
		Dec. 1	Stock control	220
				\$600

COSTS OF GOODS SOLD A/c

		\$			\$
Mar. 31	Stock control	1100	Dec. 31	Costs of goods sold	
June 30	Stock control	1200		for the year trans-	
Sept. 30	Stock control	1300		ferred to the Profit	
				and Loss A/c	3600
		<hr/>			
		\$3600			<hr/>
					\$3600
					<hr/>

The total correct adjustment for the year therefore will be \$600. Using the simple method, the adjustment would be the difference between

		\$
Opening stock @ current prices, 100 @ \$14		1400
and Opening stock @ original prices, 100 @ \$10		1000
		<hr/>
	and that is	\$400
		<hr/>

This amount of \$400 certainly does fall short of the correct adjustment of \$600 as was predicted above, and would result in the costs of goods sold figure being understated by \$200. This is shown in the following Costs of Goods Sold Account compiled as when used in a system using physical stocktakes.

Example 6

COSTS OF GOODS SOLD A/c

		\$			\$
Jan. 1	Opening balance		Dec. 31	Closing balance	
	of stock	1000		of stock	3080
Mar. 31	Purchases	1320			
June 30	Purchases	1680	Dec. 31	Costs of goods	
Sept. 30	Purchases	2080		sold for the year	
Dec. 31	Inventories			transferred to the	
	revaluation			Profit and Loss A/c	3400
	reserve	400			
		<hr/>			
		\$6480			<hr/>
					\$6480
					<hr/>

The above example shows that if an adjustment of only \$400 is used, the costs of goods sold figure for the year is calculated at only \$3400 and not at the correct figure of \$3600.

What can be done about this?

When there is a physical change in stock levels, Edwards and Bell suggest that to this amount of \$400, calculated as shown above, must be added any excess⁸ of final inventory over initial inventory, multiplied by the “excess of current cost at the end of the period over the average purchase price” of the period.⁹ With an average purchase price of approximately \$12.1 for the period,¹⁰ the additional adjustment is \$228 [i.e. $120 \times (\$14 - \$12.1)$].

This then makes a total adjustment of \$628 as compared with the correct adjustment of \$600. This is approximately correct. It is more so than the amount of \$400 on its own.

Professors Mathews and Grant also suggest a method to be used when physical stock levels change, which method will give the same total adjustment of \$628. They state that this second method “is based on the assumption that changes in the quantity of stocks take place at a uniform rate throughout the year”.¹¹ In the calculations for this method, opening and closing stocks are revalued at the average prices of the year, and the difference between them is subtracted from the difference in opening and closing stocks at actual money prices, i.e.

Difference between opening and closing stocks in money prices (\$3080 — \$1000)	\$ 2080
<i>Less</i> Difference between opening and closing stocks in average prices of the period, $(220 \times \$12.1) - (100 \times \$12.1)$	1452
	= \$628

Mr. F. K. Wright has also suggested a similar method,¹² but in all of these it must be possible to calculate the “average

⁸Or subtract any decrease.

⁹*Op. cit.*, p. 146.

¹⁰ $\frac{(120 \times \$11) + (140 \times \$12) + (160 \times \$13)}{420} = \12.1 approximately.

¹¹*Op. cit.*, p. 62. This could be the reason for the difference of \$28.

¹²In *Australian Accountant*, July 1963, pp. 378–379, Mr. Wright gives this formula for calculating the adjustment:

$$V1(p1 - p\frac{1}{2}) + V0(p\frac{1}{2} - p0),$$

where $V0$ = physical volume of opening stock, $V1$ = physical volume of closing stock, $p0$ = average book value of opening stock, $p1$ = average book value of closing stock, and $p\frac{1}{2}$ = average buying price for the period.

purchase price" for the period. Obviously, this can be done only when a limited range of stock lines exists; and if a limited range of stock lines does exist, then a perpetual inventory system should be in use.

In those cases where there is a large range of stock lines, where there is sole reliance on the physical stocktake for profit determination purposes, and where stocks have fluctuated, then it will not be possible to calculate an "average purchase price" in order to arrive at an adjustment. It will be necessary to rely on a specific index made up from a basket of all lines carried, *if* such an index is available or can be calculated.

For example, in the case just completed, if the following indexes were available for the year in question:

January 1	100
Average for year	121
December 31	140

then it would be possible to calculate with fair accuracy¹³ the adjustment that should be made to the costs of goods sold account, i.e.

			\$
	Closing stock values as per stock sheets		3080
	Less Opening stock values as per stock sheets		1000
			<u>2080</u>
Less	Closing stocks @ average prices for year		
	$\left(\$3080 \times \frac{121}{140} \right)$	=	\$ 2662
Minus	Opening stocks @ average prices for year		
	$\left(\$1000 \times \frac{121}{100} \right)$	=	1210
			<u>1452</u>
	= The necessary adjustment		<u>\$628</u>

¹³Provided that the changes in stocks take place near to a uniform rate throughout the year.

At this stage it must be concluded that if stocks *are* fluctuating throughout a period, if the “average purchase price” for the period *cannot* be calculated, if cumulative specific indexes for a firm are *not* available, if prices *are* changing, and if a physical stocktake *is* used as part of the profit determination process instead of the perpetual or retail inventory methods, then the adjustment necessary to convert costs of goods sold to current values cannot be calculated with any guaranteed accuracy.

The only course open then is to use some other index series which will reflect approximately the movement in prices in those stock items handled by the firm in question.

As stated earlier in this chapter, any firm which does not use a perpetual inventory system should be using a retail inventory system. There is no real excuse for not using either of these or some closely related adaption thereof. When either of these methods is used in times of changing prices, the matter of making adjustments in the accounting system to record correctly the relative effects as regards inventories and costs of goods sold is fairly easy. When physical stocktakes are relied on for profit determination purposes, the size of the needed adjustments can only be estimated with varying degrees of accuracy.

If further proof of this is required, another example is provided in the appendix to this chapter.

Terminology

There may be some who dislike the name of the Inventories Revaluation Reserve Account suggested in the previous pages. The author does not hold any strong views as to the actual title of the account, but insists that it be treated strictly as a *capital* reserve account and not as a *revenue* reserve account despite what existing conventional practices might be.

There may also be some who would like to split the account in some way in order to show that part which relates to stocks sold and that part which relates to stocks still on hand. Here again any existing customs in this regard should be ignored. Any such

splitting is deemed to be unnecessary, and in fact it would be a clerical difficulty if the recommended perpetual inventory or retail inventory systems are in use. When these two recommended systems are examined, it can be seen that the Inventories Revaluation Reserve Account is concerned with the revaluation of stocks on hand when specific prices change. Therefore, it seems that the terminology used is self-explanatory.

LIFO

Possibly, this chapter would not be complete unless some brief mention were made of the LIFO method of charging out costs of goods sold. LIFO is only a poor attempt at accounting in current values.

Whilst it is possible to produce costs of goods sold figures in up-to-date current values in some instances by using the LIFO method, it falls down in other instances because of one or more price changes occurring since the last inward delivery was received and invoiced.

It also falls down when the pressure of sales causes a decrease in the normal volume of inventories. Here old low historic costs are matched against sales, and profits are overstated greatly in times of rising prices.

In all cases it grossly undervalues the value of inventories on hand for balance-sheet purposes. Values here are always less (and sometimes by great margins) than if the inventories were priced using the last invoice prices. This means of course that comparisons between LIFO inventory figures and the desired current values make the LIFO figures even more odious. A balance sheet using LIFO inventory figures has no meaning at all.

APPENDIX

At the end of Chapter 9 it was stated that “when physical stocktakes are relied on for profit determination purposes, the size of the needed adjustments can only be estimated with varying degrees of accuracy”.

104 *Accounting for Price-level Changes—Theory and Procedures*

Even when the physical closing stock equals the physical opening stock, the simple adjustment of taking the difference between the opening stock at (a) end-of-year current prices and (b) opening recorded prices can be very incorrect.

The simple adjustment requires that there be no physical changes in stock levels *during* a period. In the following example, still using figures from examples 3 and 4 in Chapter 9, this will be proved. Here, however, the only difference is that the year's purchases of 300 units all occur in March and are not spread over the year. This means that stocks build up and then run down again. Prices still increase throughout the year as before.

Once more the Stock Control Account as used in a perpetual inventory system is given first so that the correct cost of goods sold and inventories revaluation reserve figures may be obtained.

STOCK CONTROL A/c						
		\$			\$	
Jan.	1	Opening balance 100 @ \$10	1000	Mar. 31	Costs of goods sold 100 @ \$11	1100
Mar.	1	Revaluation 100 @ \$1	100	June 30	Costs of goods sold 100 @ \$12	1200
Mar.	31	Purchases 300 @ \$11	3300	Sept. 30	Costs of goods sold 100 @ \$13	1300
June	1	Revaluation 300 @ \$1	300	Dec. 31	Closing balance 100 @ \$14	1400
Sept.	1	Revaluation 200 @ \$1	200			
Dec.	1	Revaluation 100 @ \$1	100			
			\$5000			\$5000

INVENTORIES REVALUATION RESERVE A/c			\$
	Mar. 1	Stock control	100
	June 1	Stock control	300
	Sept. 1	Stock control	200
	Dec. 1	Stock control	100
			\$700

The correct costs of goods sold total is still \$3600. However, it will be noticed that in this case the transfers to capital reserves should be \$700. The simple adjustment method will still give an adjustment of only \$400 [i.e. $100 \times (\$14 - \$10)$]. This means that the simple adjustment would understate costs of goods sold by \$300 and would overstate profits by the same amount. All of this has been caused by the fact that the purchases were made in bulk and were not spread over the year so as to give an even matching of purchases in current prices against the sales of the same months.

The Costs of Goods Sold Account compiled in a physical stocktake system and using the simple method (which appears to be the only one available when physical closing stocks equal physical opening stocks) would be:

COSTS OF GOODS SOLD A/c					
\$			\$		
Jan. 1	Opening balance		Dec. 31	Closing balance of	
	stock	1000		stock	1400
Mar. 31	Purchases	3300			
Dec. 31	Inventories		Dec. 31	Costs of goods sold	
	revaluation			for the year trans-	
	reserve	400		ferred to the Profit	
				and Loss A/c	3300
		\$4700			\$4700

The cost of goods sold figure for the period calculated from this account is only \$3300 and not the correct figure of \$3600 based on average current prices for the year.

It will be noticed that the correct transfer to the Inventories Revaluation Reserve Account in this example is \$700 and not the \$400 revealed in example 3 in Chapter 9. This occurs as an indirect result of the bulk buying in March before the prices rose further. In order to hold larger bulk stocks in this way, more capital is required in the firm, and the larger transfer to the Inventories Revaluation Reserve Account automatically helps to "protect" this larger capital from the erosion effects of rising prices.

106 *Accounting for Price-level Changes—Theory and Procedures*

It could be that credit was obtained to finance this bulk purchase. If this were so, then there would be a “profit on borrowing” during the period, and the other side of this entry would reduce capital reserves accordingly. This matter will be dealt with in Chapter 11.

CHAPTER 10

DEPRECIATION AND NON-CURRENT ASSETS

IN Chapters 3 and 4 reasons were given for the need to bring in depreciation charges at current prices if correct profit is to be determined. It was also shown in those chapters that all non-current (fixed) assets (too) must be brought into the balance sheet at current values if the balance sheet is to have any meaning.

If prices double all round, the gap between sales and current costs will also have doubled. It is because depreciation based on original cost will show profits to have *more than* doubled (since sales will have doubled and depreciation will have remained unchanged) that it misleads.¹

This statement by Professor Solomons demonstrates clearly that net profit is overstated if depreciation is not brought into the profit determination process at current prices.

The adjusted net profit figure will have its usefulness restricted unless the balance sheet accounts (i.e. including fixed assets) are also restated (in current values). For example, a meaningful rate of return cannot be computed by comparing the adjusted net profit with the unadjusted or partially adjusted stockholders' equity.²

Professor Perry Mason showed up the deficiencies of the conventional balance sheet, too, when he said:

Cash and receivables and the unpaid liabilities are expressed in current dollars, but the inventories and especially the plant and equipment are collections of non-comparable items since they are almost always a hodge-podge of various past-period dollars.³

¹*Accountants' Journal*, October 1948.

²A.I.C.P.A. Accounting Research Study No. 6, *Reporting the Financial Effects of Price-level Changes*, pp. 54-55.

³*Price-level Changes and Financial Statements—Basic Concepts and Methods*, p. 11.

The issues involved in valuing fixed assets and determining depreciation charges during periods of changing prices have been discussed more widely in recent years than those relating to inventories and the cost of materials used. Several reasons account for this. First, when the price trend is upward as it has been since 1900, the effects on reported profit of different techniques for computing depreciation expense are more enduring than are the effects of different inventory costing techniques. Second, the depreciation problem is complicated by the fact that, unlike inventories, fixed assets cannot even be assumed to be used up in any one accounting period; periodic charges even on the basis of original cost are at best estimates under any circumstances. Finally, the determination of current costs is a much more difficult problem in the case of fixed assets than in the case of inventories. This is so because there may be no established markets for used fixed assets, and technological change may mean the disappearance from markets (shop windows) of new assets exactly like (except for age) those owned by the firm.⁴

It is not intended to enter into discussions here on the relative merits of the various ways of charging depreciation costs in the accounting system, i.e. whether prices are changing or not. Much has been written in this area and most seem to agree that depreciation is an allocation of the cost of an asset over the accounting periods during which it is in use. This does not prevent the correct practice of restating these historic costs in current terms.

Depreciation is not primarily a method of providing funds. That the charging of depreciation does tend to assist in the accumulation of funds is merely a secondary effect. Accounting profits are reduced by depreciation charges, and outflows of cash in the form of dividends are also reduced accordingly.

It is believed that when a fixed asset is purchased, some effort should be made to estimate both the number of effective service units it contains, and also the period over which these will be given up by the asset. Depreciation charges then should be based on the number of effective service units to be given up in each year. If it is estimated that an asset will give up an equal number of service units over a 10-year period (i.e. with equal efficiency in each year) then a straight-line method of writing off the asset

⁴Edwards and Bell, *op. cit.*, pp. 161-162.

should be used. On the other hand, if it is estimated that the asset will give up a decreasing number of effective service units over its economic life, then some form of reducing balance method of charging depreciation should be used.

However, it is most important that the depreciation charge in any period include the effects of any unexpected obsolescence factors or other changes in expectations that become obvious during that period. It is possible that some of this might have to be charged against undistributed profits if part relates to the mis-statement of profits in previous periods.

The depreciation charges each year should be the current costs of the service units given up or lost by the fixed assets in that year. "We need only know the services used or foregone this period and the price this period of those services."⁵

If a manufacturer purchased a plant with a 20-year life for \$100,000 in 1950, and if the current specific cost of an identical plant in 1960 were 100% greater at \$200,000, the 1960 current costs of the service units given up by the 1950 plant would be \$10,000 p.a. and not \$5000 (assuming straight-line depreciation). The differences in unit costs of articles produced (assuming absorption costing) and in net profit figures would be significant if current costs were not used. Net profit would be overstated by approximately \$5000 for the year in 1960.

When accounting for inventories in times of changing prices, there was little need to worry about indexes. In most cases the specific unit current costs of inventory items carried could be ascertained. Unfortunately, such specific unit current costs of fixed asset items are not so readily available in many or most cases—depending on the type of items concerned.

Some types of fixed assets are marketed continuously as new products and are subject to little technical change. The current purchase price of such assets new, at the end of a period, may be obtained in the same way as the current purchase price of raw materials, by a telephone call or by arrangement for a year-end statement from the selling company. And assuming the accuracy of the depreciation method used, the current

⁵*Ibid.*, p. 175.

110 Accounting for Price-level Changes—Theory and Procedures

cost of a used fixed asset can then be derived by taking depreciation on the new (current cost value) base. But obviously this simple procedure will not be possible for assets built to individual specification, or for assets subject to marked technological change. A specially designed warehouse building, or assembly line layout, clearly has no readily obtainable new purchase price which can be used as a base for current cost depreciation. Nor can a construction firm which still uses a steam-powered steam [sic] shovel ascertain the exact cost of a new one if such equipment is no longer manufactured. The cost of a new electric or diesel-powered shovel might serve as a reasonable approximation of what a new steam shovel would cost today, or it might not; if the quality changes are significant (as we would expect them to be in this case), it will be misleading to use the price of the new, improved substitute product as a basis for determining the current cost of using the old one. . . . It must be remembered that it is not the current cost of equivalent services provided by the fixed asset over some time period which we wish to measure, *but the current cost of using the particular fixed asset which the entrepreneur chose to adopt and is still using.*⁶

Where the current cost of an identical asset is not available, the use of a specific index is recommended, and as stated in Chapter 5 of this work,

the more specific the index used for this purpose the better. An index compiled for each such asset of each firm would be the ideal situation, but of course, this would not be economically practicable in most cases. It might be possible to compile indexes for each class of asset used by each firm, or for types of assets used in each industry, or for similar types of assets used by several industries. Any of these would give a fairly high degree of accuracy, but the further the index is removed from the specific costs of the individual firm, the less accurate the accounting records and reports of that firm must tend to be.

It should be possible to estimate fairly accurate current values by using one of the various price indexes compiled by government statistical bureaus and other private organizations, i.e. the one most suitable for the particular asset or group of assets in each case.

The *gross* value of fixed assets should be restated whenever necessary in accordance with significant movements in specific prices or indexes. The *net* value of fixed assets should take into account depreciation charges which include the current costs of

⁶*Ibid.*, pp. 185–186. My emphasis in last sentence.

all service units given up, unexpected obsolescence factors and other changes in expectations.

Plant Registers

Whether prices are changing or not, all firms should use plant registers for each class of fixed assets, and these should take the form of subsidiary ledgers actually tied in with the relative control accounts in the general ledger. There should be a register of all motor vehicles, another for freehold land, another for buildings, another for machinery items, and so on. In each register there should be separate folios or records for each motor vehicle, each item of land, each building, each machinery item, etc., and in these should be recorded individual details of original costs, revaluations, depreciation charges, and repair costs. Reconciliations should be made with the control accounts (both for the assets' gross values and the depreciation provision accumulations) regularly and in a similar way to those reconciliations made in connection with the subsidiary ledgers maintained for accounts payable and accounts receivable.

When such registers are maintained it is possible to calculate depreciation using separate, more accurate rates and methods for each item or for each group of items. This results in more accurate product costing (for the absorption costing manufacturer) and more accurate profit determination for all firms.

Further, when prices are changing, the keeping of such registers enables greater accuracy if the specific current prices or indexes relating to some items are changing at different rates from other items within the same register and covered by the same control account.

Most of the larger firms maintain such registers and this does not cause many difficulties in these days of modern accounting machines, punched cards and computers. The advantages of having accurate and vital information offset any difficulties.

By recording details of costs of repairs and maintenance for each item, much valuable information is available when making

decisions concerning the investment in new or replacement equipment.

Depreciation Charges at Average Current Costs for the Period

In the previous chapter, when dealing with costs of goods sold, it was pointed out that the adjustments recommended produced the figure for costs of goods sold in *average* current prices for the period. As sales revenue figures are produced automatically in average current prices for the period, the matching of these revenues with the costs of goods sold figure, also expressed in average current prices, produces a profit figure by a logical process.⁷

It will be necessary therefore to produce depreciation charges in *average* current costs for the period if a consistent approach is to be made to this problem. That it is necessary to produce depreciation charges in average current costs for the period is a little unfortunate as this requires slightly more clerical effort. It is easier to produce depreciation in end of the year prices. This, however, did not apply in the case of costs of goods sold.

Picture an asset whose current value (as new) at the beginning of the year is \$10,000 and at the end of the year is \$11,200. If depreciation is to be charged at the rate of 12% p.a., and if current costs have been rising at an even rate throughout the period, then the depreciation charge for the year at average current prices will be:

$$12\% \text{ of } \frac{\$10,000 + \$11,200}{2} = \$1272.$$

Depreciation based on end of the year prices would, of course, have been 12% of \$11,200, or \$1344.

⁷As previously mentioned, the matter of producing all sales and costs of goods sold figures in prices current at the *end* of the period will be discussed in a later chapter.

This then produces an interesting problem, for, as Mr. W. E. Nichols has pointed out, if average depreciation charges are calculated in this way,

the conventional link between depreciation expense and asset valuation must be broken because it becomes necessary to measure depreciation in terms of average prices of the period for income determination purposes and to use end-of-year prices for current-value balance sheet purposes. The difficulty here is that the calculation of the current-value of depreciable assets by reference to end-of-year prices implies recognition of depreciation in terms of end-of-year prices for balance sheet purposes.

Thus, the problem of devising a reasonably satisfactory system of accounting, which would record both current income and the current value of depreciable assets, involves the choice of a convenient method preserving the conventional double-entry link between depreciation and asset valuation (but which results in an ambiguous calculation of current income) or an alternative procedure, which destroys that link, but provides a satisfactory measurement of current income in terms of average prices of the period. . . . Satisfactory measurement of current income is much more important than conventional links between depreciation expense and asset valuation.⁸

In the case above, assuming that the asset was purchased for \$10,000 at the beginning of the year, the journal entries at the end of the year to record the depreciation at *average* current prices and the asset in net *end of year* current values would be as follows:⁹

Depreciation expense	Dr. \$1272	
Provision for depreciation		Cr. \$1200
Asset Revaluation Reserve A/c		Cr. \$ 72
(Depreciation at average current prices for the year.)		
Asset Current Value Adjustment A/c	Dr. \$1056	
Asset Revaluation Reserve A/c		Cr. \$1056
(Difference between net current value and net historical cost as at the end of the year, i.e. 88% of \$11,200 minus 88% of \$10,000.)		

The ledger accounts in the general ledger after these journal entries had been posted would look like this:

FIXED ASSET A/C
Jan. 1 Purchased for \$10,000

⁸*Op. cit.*, p. 511.

⁹With apologies to Mr. Nichols for the alterations to his suggested entries.

114 Accounting for Price-level Changes—Theory and Procedures

	PROVISION FOR DEPRECIATION A/C	\$
	Dec. 31 Depreciation expense	1200
	ASSET CURRENT VALUE ADJUSTMENT A/C	
Dec. 31 Asset revaluation reserve	\$ 1056	
	ASSET REVALUATION RESERVE A/C	\$
	Dec. 31 Depreciation expense	72
	Dec. 31 Asset current value adjustment	1056
		\$1128

	DEPRECIATION EXPENSE A/C
Dec. 31 Annual charge at average current cost	\$ 1272

In the balance sheet at the end of the year, the fixed assets section would appear as follows:

	\$	\$	
Fixed asset at cost	10,000		
<i>Less</i> Depreciation provision	1,200		
		8800	
<i>Plus</i> Adjustment to bring net historic costs to current values		1056	
		\$9856	

This then achieves the ideal. The fixed asset is shown in the balance sheet at its total net current value as at the *end* of the year, \$9856 (which is the same as the end of year current cost of \$11,200 less 12% depreciation), and the annual depreciation charge of \$1272 is at mid-year prices. Mr. Nichols might not like the way both the \$72 and the \$1056 have been lumped together in the one reserve account above. However, as was pointed out in the last chapter, the author has no strong feelings about the naming of the reserve accounts, provided that they are treated as *capital* reserve accounts and provided that any existing conventional distinctions between capital and revenue reserve accounts that might be involved here are ignored.

It will be noticed that the above method requires the retention in the accounting records of the original cost of the fixed assets, and that a separate Asset Current Value Adjustment Account becomes a necessity. When dealing with inventories in the previous chapter, both of these were successfully avoided.

It is unfortunate that *this* method of accounting, necessary to achieve both (a) *average* current depreciation charges for profit determination purposes, and (b) net current values in *end-of-year* prices for balance-sheet purposes, is so cumbersome. It becomes more cumbersome when entries are made for the production of essential *monthly* financial statements and for the monthly allocations of depreciation in an absorption costing system.¹⁰

Recommended Procedures

In order to overcome the cumbersome nature of the above entries, the following method based on *monthly end-of-month* entries is proposed. It preserves the conventional double-entry link between depreciation and asset valuation. In most cases it produces an annual depreciation charge which is more accurate as a depreciation charge for the year in average current costs, because it takes into account actual monthly movements in the current value of assets and does not assume that the price movements have been steady throughout the year.

Monthly financial statements are essential in any organization and therefore, depreciation must be calculated monthly.

It is recommended that monthly depreciation charges be based on end-of-month current costs of assets. The summation of these monthly depreciation charges will be very close to a true average for the year. To base the monthly charges for depreciation on the mid-point value of each *month* would give complete accuracy, but this would reintroduce the difficulties of the method described a few pages ago.

¹⁰These allocations are necessary for the production of monthly manufacturing expense variances.

116 Accounting for Price-level Changes—Theory and Procedures

In the previous example, if we assume that the increase in current values of the asset (as new) from \$10,000 to \$11,200 took place in two equal increases in April and October, then the calculations of monthly depreciation charges on end-of-month gross current values would be as follows:

Month	Original cost in current values	Monthly depreciation charges @ 12% p.a. on end-of-month values
	\$	\$
Jan.	10,000	100
Feb.	10,000	100
Mar.	10,000	100
April	10,600	106
May	10,600	106
June	10,600	106
July	10,600	106
August	10,600	106
Sept.	10,600	106
Oct.	11,200	112
Nov.	11,200	112
Dec.	11,200	112
		Total for year \$1272

This annual charge equals the correct average current cost charge for the year calculated in the previous example. If the depreciation charge for the year had been calculated (incorrectly) on end-of-year current values of \$11,200 (i.e. @ 12%), it would have been \$1344. It can be seen that whilst this figure of \$1344 is nowhere near correct, the calculation of the annual depreciation charge on end-of-month current values will always be very close to the correct average yearly cost in current prices.

If the increase in current values had all taken place early in the year, a complicated calculation could be necessary to obtain the correct depreciation charge in average current values if the charge were calculated only once per year. The calculation of depreciation charges should take place monthly, and this immediately permits using end-of-month current asset values with a high degree of accuracy.

Accounting Entries for Recommended Procedures

Changes in the current values of non-current assets will become known through actual changes in the current values of identical assets in the market place, or through a movement in the specific index series being used for each asset.

As soon as it becomes known that the current price of an asset has altered significantly, entries should be made immediately to record this in (i) the subsidiary ledger concerned, i.e. the plant register, and (ii) in the control accounts themselves in the general ledger.

In the example above, it was learned in April that the current price of the asset had increased from \$10,000 to \$10,600. The revaluation would be recorded in the plant register and the following journal entry made in order to alter the control account:

April 10 Fixed Asset A/c	Dr. \$600	
Asset Revaluation Reserve A/c		Cr. \$600
(Being revaluation of gross asset figure at current prices.)		

It will be noticed that in the procedures recommended here, no attempt is made to record the changes in the current values of assets in a separate asset account. This is not considered necessary. The revaluation should be to the fixed asset account itself. Once a cost has been superseded by a new current price, it has no significance.^{10a} It will be remembered that this recommendation is consistent with the ones made in the previous chapter concerning inventories. No separate control account to record the changes in values of inventories was recommended there either.

A further journal entry is necessary to revalue the accumulated balance in the Provision for Depreciation Account too, i.e. from \$300 to \$318. This entry would be:

April 10 Asset Revaluation Reserve A/c	Dr. \$18	
Provision for Depreciation A/c		Cr. \$18
(Being revaluation of depreciation provision balance in current prices.)		

^{10a}For taxation purposes the depreciation charges on historical costs can be calculated from records in the plant register.

118 Accounting for Price-level Changes—Theory and Procedures

This second entry adjusts depreciation charges already written off the gross asset (i.e. in previous months only in this example).

Note: The above two journal entries could be combined into one:

Fixed Asset A/c	Dr. \$600	
Provision for Depreciation A/c		Cr. \$ 18
Asset Revaluation Reserve A/c		Cr. \$582
(Being revaluation of the net asset from \$9700 to \$10,282.)		

From this combined entry it might be more obvious that it is the *net* book value of the asset which is really being revalued, i.e. by the net amount of \$582. The current price of a similar new asset increased by 6%, and the above entries are designed to increase the net book value of the existing asset by 6% too. This is done by writing up both the gross fixed asset account itself and its depreciation provision account.

It is thought that these entries present few recording problems, and certainly many less than when the connection between the depreciation charge and the balance-sheet values is lost.

In the above example, when the second increase in current values became known in October, the plant register would be written up again and the following journal entries would be made:

Oct. 10	Fixed Asset A/c	Dr. \$600	
	Asset Revaluation Reserve A/c		Cr. \$600
	(Being revaluation of gross asset figure at current prices.)		
Oct. 10	Asset Revaluation Reserve A/c	Dr. \$54	
	Provision for Depreciation A/c		Cr. \$54
	(Being revaluation of depreciation provision balance in current values.)		

Note: The depreciation provision balance to the end of September would be \$954 (i.e. 9 months @ \$106) and it had to be written up to \$1008 (i.e. 9 months @ \$112).

The relevant general ledger accounts for the year are now given for this recommended procedure so as to complete the picture, and so that it may be compared with the first illustration given in this chapter.

FIXED ASSET A/C

		\$
Jan. 1	Purchased	10,000
April 10	Revaluation	600
Oct. 10	Revaluation	600
		<u>11,200</u>

PROVISION FOR DEPRECIATION A/C

		\$
Jan. 31	Depreciation expense	100
Feb. 28	Depreciation expense	100
Mar. 31	Depreciation expense	100
Apr. 10	Revaluation	18
Apr. 30	Depreciation expense	106
May 31	Depreciation expense	106
June 30	Depreciation expense	106
July 31	Depreciation expense	106
Aug. 31	Depreciation expense	106
Sept. 30	Depreciation expense	106
Oct. 10	Revaluation	54
Oct. 31	Depreciation expense	112
Nov. 30	Depreciation expense	112
Dec. 31	Depreciation expense	112

Note: \$1344 = 12% of \$11,200.

\$1344

ASSET REVALUATION RESERVE A/C

		\$			\$
April 10	Prov. for depn.	18	April 10	Fixed asset	600
Oct. 10	Prov. for depn.	54	Oct. 10	Fixed asset	600
Dec. 31	Balance	1128			
		<u>1200</u>			<u>1200</u>

DEPRECIATION EXPENSE A/C

		\$
Jan. 31	Prov. for depn.	100
Feb. 28	Prov. for depn.	100
Mar. 31	Prov. for depn.	100
April 30	Prov. for depn.	106
May 31	Prov. for depn.	106
June 30	Prov. for depn.	106
July 31	Prov. for depn.	106
Aug. 31	Prov. for depn.	106
Sept. 30	Prov. for depn.	106
Oct. 31	Prov. for depn.	112
Nov. 30	Prov. for depn.	112
Dec. 31	Prov. for depn.	112
		<u>1272</u>

120 Accounting for Price-level Changes—Theory and Procedures

In the balance sheet at the end of the year, the fixed asset section would appear as follows:

Fixed asset	11200
Less depreciation provision	<u>1344</u>
	<u>\$9856</u>

Now compare these ledger accounts with those given earlier in this chapter for the method in which there was no connection between the depreciation charge and the net asset valuation for balance-sheet purposes (i.e. see pp. 113–114).

Notice that the net asset figure for balance-sheet purposes is the same in both cases at \$9856, that the balance of the asset revaluation reserve account is \$1128 in both, and that the depreciation expense charge is the same in both cases at the average current cost for the year of \$1272.

It is considered that this second method, i.e. the recommended method, is easier to understand, is consistent with procedures recommended in the previous chapter concerning inventories and costs of goods sold, and is simpler to operate practically.

Retrospective Adjustment to the Depreciation Provision Account

In the method recommended above, adjustments were made to the *net* asset figure as changes occurred in current prices. In order to do this, both the gross asset balance and the balance of the depreciation provision were written up to reflect the new current figures. For example, when the current price of the fixed asset used in the example increased by \$600 on April 10, the following two entries were processed:

Fixed Asset A/c	Dr. \$600	
Asset Revaluation Reserve A/c		Cr. \$600
and		
Asset Revaluation Reserve A/c	Dr. \$ 18	
Provision for Depreciation A/c		Cr. \$ 18

The second entry here concerning the Provision for Depreciation Account is referred to as the “retrospective adjustment”. It is the entry which adjusts the depreciation provision account

balance to what it would have been if the new current price had been current throughout the asset's life to date.

It will be noticed that the other side of the recommended entry is charged to the Asset Revaluation Reserve Account, and as pointed out previously too, this makes the *net* increase to this reserve account, in this case, the net amount of \$582 (and not \$600).

There are some who claim (incorrectly) that the retrospective adjustment necessary to "revalue" the provision for depreciation account should be made against (or to) profits, or as an appropriation of profits. They would show the second entry above as:

Profit and Loss A/c (or Profit and Loss		
Appropriation A/c)	Dr. \$18	
Provision for Depreciation A/c		Cr. \$18

Thus they would increase the Asset Revaluation Reserve Account in this case by \$600 (and not \$582)—the additional \$18 being at the expense of distributable profits.

The following are some examples of this kind of thinking.

On revaluation (i.e. where the price change is sufficiently important) the depreciation element of the work-unit rate must be recalculated. For future costing the new rate will be used. In so far as the past provisions were insufficient (or excessive) an adjustment must be made.

An insufficient charge must be debited to the profit and loss account of the period of its ascertainment.¹¹

Any failure on the part of previous charges to provide the full current replacement cost should be made good by an appropriation of profit.¹²

... the deficiency is due to the fact that the first year's provision was inadequate in the light of subsequent knowledge; at the end of the first year it could not have been foreseen that prices would have risen to the level they had reached by the end of the second year. The credit balance of the provision for depreciation account must be brought up to ... by crediting it ... and debiting undistributed profits (e.g. profit and loss appropriation account) with the same amount.¹³

It is considered incorrect to debit the Profit and Loss Account with the retrospective depreciation adjustment in this way. To

¹¹Mey, A. and Most, K. S., *Accountant*, 7 September 1963, p. 279.

¹²Institute of Cost and Works Accountants, *The Accountancy of Changing Price Levels*, p. 61.

¹³Chambers, R. J., *Accounting and Action* (Law Book Co. of Australasia Pty. Ltd., 1957), p. 152.

do so results in an excessive charge against profits (i.e. in times of rising prices—and vice versa when current prices are falling). Revenues should be charged with the current cost of assets used up in producing those revenues—no more and no less. To charge revenues with a retrospective adjustment as well results in incorrect profit determination for the period in question.

It might be thought, then, that the correct procedure is to charge the retrospective depreciation adjustment to the Profit and Loss Appropriation Account, but this, too, is basically wrong. It suggests that the determination of profit in previous years has been incorrect. If depreciation expense in those years has been expressed in costs current in those years, then there is no evidence of any previous incorrect profit determination.

It seems that the basis for the move to charge the retrospective depreciation adjustment against profits or undistributed profits stems from a desire to charge, against profits, over the lifetime of an asset, the total final current cost of the asset, and in so doing to ensure that sufficient funds are retained in the business to enable the replacement of the asset or its equivalent in value. There seems to be a desire to ensure that “provision has been made for the maintenance of capital by depreciation charges based on current costs”¹⁴ applying at the end of the asset’s life.

The accounting for depreciation does not “ensure” that funds of any amount will be retained in the business. But even more serious is the implication that the total depreciation charges over the life of the property should equal the cost of replacement if it is higher than original cost, or that funds equal to the periodic depreciation charges should be expected to accumulate to the amount of the replacement cost. To insist that replacement cost should be covered by the total depreciation charges during a period of rising prices means that more than the depreciation based upon current appraisal value [or costs] would have to be charged each year to make up for the deficiencies of past periods, and this would result in costs clearly out of line with reality. *If replacement costs were falling, more than enough would have been charged in past periods, and the current charge would have to be reduced below the competitive level in order to avoid an excessive accumulation.*¹⁵

¹⁴*Ibid.*

¹⁵A.I.C.P.A. Accounting Research Study No. 6, *Reporting the Financial Effects of Price-level Changes*, pp. 33–34. Emphasis added.

The correct procedure is as recommended. Depreciation charges should be in costs current during each period. Retrospective adjustments are related to the *net* asset value in each case, and concern the Asset Revaluation Reserve Account only, i.e. as regards the other side of the entry.

In any case, those who seem to be interested in maintaining capital by charging the retrospective depreciation adjustment against profits are overlooking an important point. *If* the funds, retained in the business by the depreciation charges (in current costs), are reinvested in other physical assets which also “appreciate” in value (i.e. in times of rising prices) at a similar rate, then sufficient funds for replacement *will* have been retained in the business.

This important point has been noted by many people and some of their remarks on this point are given in the hope that they may make the position more clear.

Depreciation calculated on this basis (i.e. on current costs) will not necessarily provide sufficient funds for replacement of the asset if its replacement value continues to rise in the future. *It may approximately do so if it is invested in assets which themselves rise in value with the inflation.*¹⁶

There is no reason, however, why the cumulative charge (for depreciation) should equal replacement cost. Any assumption of such a relationship appears to be related to the old fallacy that depreciation automatically provides funds for replacement. A correct statement of income may aid management in the making of replacement decisions, but this would seem to be the only direct interdependency which should exist between the determining of depreciation charges and the replacement of fixed assets. Replacement is clearly not automatic, and will often be made by purchasing an asset which differs substantially from the existing one. During the life of the asset, management has had access to funds, as a result of deducting current cost depreciation, which are in excess of the funds which would have been acquired on the basis of historic cost depreciation if prices are rising. Such earnings may be more than or less than sufficient for purposes of replacement, depending upon the exact pattern of price changes and the skill of management in using the earnings during the interim period. *Continuous investment of income-covered depreciation funds in like assets, for example, will insure that the firm can always maintain its stock of machines.*¹⁷

¹⁶Mathews and Grant, *op. cit.*, p. 12. Emphasis added.

¹⁷Edwards and Bell, *op. cit.*, p. 193. Emphasis added.

124 Accounting for Price-level Changes—Theory and Procedures

When depreciation funds are built up, whether they are invested inside or outside the business, they are accumulated by setting aside assets. So long as these accumulated assets are of such a kind that their value is likely to move more or less in line with the asset whose replacement is being provided for, they provide a perfectly good "hedge" against unforeseen movements in the price level. If asset replacement costs rise above present levels, so, it may be hoped, will the realizable assets in the depreciation fund. So long, then, as depreciation charged *now* is sufficient to provide a due proportion of asset costs *now*, future price movements can be left to take care of themselves.¹⁸

Must we, then, each year not merely augment the current instalment [of depreciation], but also look back and top up still further the accumulated instalments of earlier years? [i.e. out of profits] . . . As cash comes in during a year, each instalment tends to be invested by the treasurer in whatever assets the firm thinks most productive; *if* these are non-money, they should thenceforth tend to appreciate in step with the inflation, and so maintain their real value. Topping-up is automatic.¹⁹

A numerical example is now given to show how funds sufficient for replacement purposes can be built up within a firm even though the retrospective adjustment for depreciation is *not* charged against profits.

Assume that a fixed asset is purchased at the beginning of year 1 for \$10,000, that it has an estimated life of 10 years, that straight-line depreciation is used, that the firm's operations are profitable, that the cash funds retained in the business through the current cost depreciation charges are immediately reinvested in land, and that the specific index for land moves in the same direction and at the same rate as the specific index for the asset being depreciated. Land has been chosen in this example to simplify the demonstration. (The theory is not affected in any way if the funds are reinvested in a depreciating asset, but then your author would have had to show here the complicated reinvestment of the funds provided by its depreciation, and so on.)

¹⁸Solomons, *op. cit.*, (*Accountants' Journal*, October 1948).

¹⁹Baxter, W. T., *The Investment Analyst*, December 1962, p. 10.

1.	2. Index	3. Gross current cost of fixed asset \$	4. Depreciation expense charges @ average current cost \$	5. Which reinvested until end of year 10 in land @ monthly intervals would give approximately: \$
Beginning year 1	100	10,000	1050	$\times \frac{200}{105} = 2000$
End year 1	110	11,000	1150	$\times \frac{200}{115} = 2000$
End year 2	120	12,000	1250	$\times \frac{200}{125} = 2000$
End year 3	130	13,000	1350	$\times \frac{200}{135} = 2000$
End year 4	140	14,000	1450	$\times \frac{200}{145} = 2000$
End year 5	150	15,000	1550	$\times \frac{200}{155} = 2000$
End year 6	160	16,000	1650	$\times \frac{200}{165} = 2000$
End year 7	170	17,000	1750	$\times \frac{200}{175} = 2000$
End year 8	180	18,000	1850	$\times \frac{200}{185} = 2000$
End year 9	190	19,000	1950	$\times \frac{200}{195} = 2000$
End year 10	200	20,000		
			15,000	20,000

Notes:

1. The calculations in column 5 should really be in monthly rests and cover several pages, but it is thought that this gives the idea.

(Notes—continued on following page)

In the above discussions concerning the matter of replacement, two “ifs” were mentioned. It was stated that the charging of retrospective depreciation adjustments against profits is *not* necessary in order to ensure asset replacement:

- (a) *if* the funds retained in the business by the depreciation charges are reinvested in other physical assets, and
- (b) *if* these other new physical assets also “appreciate” at a similar rate (i.e. assuming a period of rising prices).

These two “ifs” are now examined to see what the result is if they do not occur.

If the cash funds retained in the business are *not* reinvested in physical assets during a period of rising prices, there could be much dissipation of capital. All else being equal, it would be bad management to waste the cash, to hold the cash in liquid form, or to reduce creditors. To do any of these things could be failing to hedge against the inflation.

It is possible that depreciation funds may be “invested” in cash or fixed interest-bearing securities, i.e. in assets which will not appreciate in value however much future replacement cost rises. This means that the business has failed to hedge against future price movements, and a loss may well result. But such a loss must be looked at quite separately—it is not strictly incidental to the problem of providing for asset replacements.²⁰

If this happens it is just plain bad business administration and bad business finance. Although current profit determination may take place by matching current costs of all kinds against current revenues, this in itself will not ensure proper maintenance of

-
2. It is because column 4 does not total \$20,000 that some want to charge retrospective depreciation adjustments against profits. However, when these depreciation expense charges are reinvested in physical assets with similar current cost movements, sufficient funds for replacement (if desired) are retained in the business. (See the total of column 5.)
 3. Incidentally, the situation when depreciation is charged against revenues at historic cost is not *quite* as bad from a replacement point of view when prices are rising as many think. This is demonstrated in the appendix to this chapter.

²⁰Solomons, *op. cit.*, (*Accountants' Journal*, October 1948).

capital. It will assist in this direction, but bad management is capable of wasting capital when prices are rising, or falling, or remaining constant.

The extent to which a loss may result from holding funds in cash, in money claims, or in interest-bearing securities, etc., when prices are rising, and the extent to which lower profits may result owing to the unnecessary reduction of borrowings in times of rising prices, all will be reflected in the accounting procedures to be discussed in the next chapter when losses (and profits) on monetary items are dealt with.

However, at this stage it can be said that if the funds retained in the business by the depreciation charges are held in the form of cash, money claims, or interest-bearing securities, etc., during a time of rising prices, the loss so incurred must be recorded in the following way:

Loss on holding monetary assets	Dr.	
Capital reserve		Cr.
(Being loss incurred by holding assets in a monetary form during a period of rising prices.)		

This will not *prevent* the loss, but at least it will record the facts, it will reduce profits, it will reduce dividends, it will assist in maintaining capital, and it will thus tend to retain in the business sufficient funds to provide the necessary replacements of fixed assets.

As pointed out above, replacements will be impossible when prices are rising, falling or remaining constant, *if* management is bad and/or *if* real profits are not being made.

What now if the funds retained in the business by the depreciation charges are reinvested in other physical assets which do *not* “appreciate” at a similar rate in a period of rising prices? That is, what if the specific current costs or indexes of the new assets move at a different rate?²¹

²¹It is possible that they might move in a different direction. While this might occur only in a minority of cases, it will not affect the outcome of these discussions.

It is not good theory, but it is contended that in most cases what “is missed on the swings will be picked up on the roundabouts”. A firm has a stock of various kinds of fixed assets and these must be replaced from time to time. It could be that each various class is replaced by rotation within its class, or it could be that funds provided by the depreciation of one class are used to replace some items of another class and vice versa. In a large manufacturing organization it would be impossible to pinpoint the source of funds used in most replacement decisions.

In this regard Professor A. Goudekct, chief internal auditor of the world-wide Philips Electrical companies said of his organization:

Due to the size of the concern, the composition of the total fixed assets as far as lives are concerned approximates an average. As a result, yearly replacements for all practical purposes are equal to the yearly depreciation. [Remember that they charge depreciation based on current costs.] This implies that the capital invested in fixed assets always relates to the total of fixed assets of an average life and no deferred depreciation needs to be provided for.²²

That a company might be expanding, might be using newer technological improvements, or might be diversifying does not matter. As pointed out previously in Chapter 7, profit

should measure the amount by which the firm is better off after taking into account the specific current costs of assets used up in producing the revenues. Such profit is created by daily and monthly transactions and not just at the end of the period when the profit figure for the whole year is calculated. This profit (together with depreciation funds retained) is reinvested immediately throughout the period in other assets, *and it does not matter if these are of a different kind*, provided that the specific current costs of using up these during the remainder of the period are also taken into account in the profit calculation.

When considering both of these “ifs” it must be remembered that the charging of depreciation is part of the profit determination process. The fact that it tends to provide funds for the replacement of fixed assets is just “by the way”. Whether this is actually done or not depends upon the capabilities of the management, their reinvestment decisions, technological changes, and the

²²Goudekct, A., *Journal of Accountancy*, July 1960, p. 39.

prospects of the firm and of the industry within which it is situated.

It should be remembered that when prices are rising, capital erosion despite current cost depreciation is caused "by the failure to add to appreciating assets each year an amount equal to the depreciation charge (including price-level adjustment)".²³

Accelerated Depreciation

Just as the previous chapter might not have been complete without a reference to the LIFO method of charging out costs of goods sold, this chapter might not be complete without making some brief mention of accelerated depreciation. Incidentally, it is not unlike LIFO in its effects.

Accelerated depreciation is a very poor substitute for charging depreciation at current prices. Even if, by some fluke, the accelerated depreciation charges do approximate correct depreciation based on specific current costs (which, incidentally, is very unlikely), the failure to write up the gross asset value means that the fixed asset is seriously undervalued in the balance sheet. This, like LIFO, makes the balance sheet a worthless document.

Also, accelerated depreciation tends to cause the overstatement of profits in later years when the asset is still in full production and there are few costs remaining to write off against the revenues it creates. It has been argued that the accelerated depreciation of newer assets will take care of this, but as this process goes on it would take expert mathematicians and magicians to produce accurate depreciation charges. In any case, the day of reckoning must come as soon as there is a flattening out of the capital investment curve.

Intangible Assets—Goodwill

When intangible asset items such as organization costs, patents, copyrights, etc., exist in the accounting records, their origin can

²³Wright, F. K., *Australian Accountant*, p. 377.

usually be traced to some expenditures. As with fixed assets, these assets contain future service units and they should be amortized in accordance with the expected usage rate of those service units. Some intangible assets will provide benefits over the full life of a company, and where this is so they should be “amortized over the corporation’s life and if that life is perpetual then the periodic amortization is zero”.²⁴ Whenever the original cost of an intangible asset is considered to understate its value, every effort should be made to place the full estimated value on the item—with the corresponding credit going to a capital revaluation reserve account. If this is not done, the present value of all rights available to the firm will not be revealed in the balance sheet, and future profit will be overstated if the intangible item is one being amortized.

The fact that there is no market place for most intangible assets creates problems in times of changing prices and values, but care will produce results that will be more accurate than those that would be produced if no revaluing is carried out after significant value changes.

No mention has been made of *goodwill* so far in this section. Goodwill is the present value of those economic benefits that will accrue to a firm from such things as its monopolistic situation, its good name and reputation, its excellent staff, the outstanding ability of its management, its favourable situation for the kind of business it conducts, and the excellent relationships that have developed with its customers over the years.

It follows that goodwill is the excess (if any) of the present value of a firm as a whole over the present value of *all* its other assets. If this excess is to be quantified accurately at any time during a firm’s lifetime, the future net cash flows for the whole firm and for its assets (as they both exist at that point of time) need to be estimated and discounted to obtain their present values. This subjective process would have to be repeated each

²⁴Gilman, S., *Accounting Concepts of Profit*, New York, Ronald Press Co., 1956, p. 318.

year if it were desired to quantify changes in the value of goodwill. Conceptually, any such changes from year to year would be made up of three main factors in the discounting process:

1. A reduction in the estimated cash flows for the year which has now become the present.
2. An increase caused by:
 - (a) the cash flows of each other future year coming nearer the present year by one year, and
 - (b) the recognition of the cash flows of the most distant but now recognizable year.
3. Any increase or decrease caused by possible changes in:
 - (a) the various estimated net cash flows being discounted, and
 - (b) the discount rate itself.

(There would, for example, be a net increase in the total goodwill figure to the extent that 2 above exceeded 1 above—and vice versa.)

Such subjective calculations would not be possible in practice. In fact, the absence of objectivity in the goodwill area has resulted in very few accountants valuing goodwill by *any* method on an *annual basis*—even for internal use. Goodwill is usually recognized and recorded only when it is purchased, and this occurs when the purchase price paid for a business exceeds the combined values of other assets acquired. In this situation the accountant is faced with the fact that expenditure *has* taken place and he must charge it to profit and loss or carry it forward in the balance sheet. This, surely, results in a highly irregular state of affairs. Although goodwill may exist for most going concerns, it is recognized and recorded only for some of the businesses that change hands.

This might account for a prevalent fetish of amortizing purchased goodwill as quickly as possible, which action usually results in serious understatements of profits in the years that this amortizing takes place. Even if an attempt is made to amortize

132 Accounting for Price-level Changes—Theory and Procedures

the purchased goodwill in a more rational manner, profits for the years concerned would still be understated by the ignoring of changes in goodwill of the kind mentioned in paragraphs 2 and 3 above.²⁶

The purchase price of goodwill should be left intact in the firm's accounts while the earning power of the business concerned is unimpaired, and consideration should be given to the possible need to increase the amount if the business becomes more successful and/or if price levels rise. Not only would this avoid the incorrect profit determination caused by indiscriminate amortizations of goodwill, but it would also result in the balance sheet's showing the current value of the business; and this is needed for overall return on capital calculations and for better reporting to all concerned.²⁶

For these same reasons it is thought that an attempt should be made each year by management to place a value on the firm as a whole (and hence on goodwill—if any²⁷), i.e. whether any purchased goodwill appears on the books or not.

Although D. R. Ladd (who supports a similar idea) says:

²⁶Further inaccuracies in the profit determination process will occur when depreciating the assets purchased if no attempt has been made to express the net book values of these assets in *current* costs. Too often the purchased goodwill figure is ascertained by subtracting the net book historical cost figures for the assets from the total purchase price of the firm. It is thought that the following statement of H. J. Barclay at p. 185 of *The Canadian Chartered Accountant* for September 1963 contained good advice: "When allocating the purchase price to the various net assets, the considered judgment of the new owner as to current price levels and the condition of the acquired properties should carry most weight, not the book values of the previous owners. The latter values are not significant for accounting purposes unless they happen to coincide with and represent the best evidence of the reasonable worth to the new owner."

²⁶Some people have recognized that the writing off of purchased goodwill results in the understatement of profits in most cases and have recommended that the goodwill be written off immediately against reserves of some kind (e.g. Spacek, L., *Journal of Accountancy*, February 1964). Whilst this might solve the profit determination problem, it does not result in a correct balance sheet presentation.

²⁷A "minus" figure might indicate the necessity for a major alteration in plans.

It would be an important function of the public accountant to test the reasonableness of management estimates (of goodwill), utilizing his knowledge of the particular corporation, his ability to compare estimates with those made by other clients, and a knowledge of business conditions generally",²⁸

it is believed that the attitudes of many accountants in public practice would make it necessary to confine such valuations to internal reporting in most cases. To the extent that this belief is correct, it would leave only purchased goodwill in published accounts.

APPENDIX

When depreciation is charged against revenues at original historic costs in times of rising prices, profits are definitely overstated, and capital will not be maintained if all such "profits" are distributed. Continued replacement of similar physical assets would not be possible under such circumstances. However, the situation is not *quite* as bad as many think. The following example is designed to show this.

A fixed asset is purchased at the beginning of year 1 for \$10,000. It has an estimated life of 10 years and straight-line depreciation is used. The firm's operations are profitable and the cash funds retained in the business though the depreciation charges are immediately reinvested in land. The specific index for land moves in the same direction and at the same rate as that for the asset being depreciated. (See p. 134.)

²⁸Ladd, D. R., *Contemporary Corporate Accounting and the Public*, p. 155.

134 Accounting for Price-level Changes—Theory and Procedures

	Index	Depreciation expense charges @ historic cost \$	Which reinvested until end of year 10 in land @ monthly intervals would give approximately: \$
Beginning year 1	100	1000	$\times \frac{200}{105} = 1905$
End year 1	110	1000	$\times \frac{200}{115} = 1739$
End year 2	120	1000	$\times \frac{200}{125} = 1600$
End year 3	130	1000	$\times \frac{200}{135} = 1481$
End year 4	140	1000	$\times \frac{200}{145} = 1379$
End year 5	150	1000	$\times \frac{200}{155} = 1290$
End year 6	160	1000	$\times \frac{200}{165} = 1212$
End year 7	170	1000	$\times \frac{200}{175} = 1143$
End year 8	180	1000	$\times \frac{200}{185} = 1081$
End year 9	190	1000	$\times \frac{200}{195} = 1026$
End year 10	200		
		10,000	13,856

Notes:

1. This shows that although only \$10,000 was charged as depreciation expense throughout the period, there would be an amount of \$13,856 reinvested within the business which could be used towards the replacement of the asset in this case.
2. However, \$20,000 will be needed, and as was shown in this chapter, depreciation charges at current costs on a monthly basis are necessary for correct profit determination—and also to assist in providing this amount.

CHAPTER II

MONETARY ITEMS

IN THE two previous chapters, accounting procedures for costs of goods sold, inventories, depreciation and non-current assets during times of changing prices were discussed. The purpose of this chapter is to examine the matter of monetary items, and this heading covers such items as bank account balances, cash on hand, accounts payable, accounts receivable, prepayments, accruals, and so on. That is, the heading covers all of those items whose money *face value* does not alter as prices rise or fall—with the exception of those items making up the capital of the firm.

Investments present some different problems and will be dealt with later in this chapter.

In Chapter 3 it was stated that the only real way to lose money when prices are rising is to hold monetary assets during such a period, and that the opposite applies when prices are falling. These profits and losses must be taken into account in the profit determining process if accurate figures are to be produced and if the real return on the firm's total capital is to be calculated accurately. Example 3 in Chapter 4 demonstrated the problem.

Other ways of expressing what has been said above are set out below in order to establish the point clearly before proceeding.

Here is an extract from Accounting Research Study No. 6:

With respect to the "monetary items" . . . gain or loss occurs as the purchasing power of the dollar decreases or increases because the dollar as legal tender does not change and has not changed in this country since the Gold Standard Act of 1900 made all U.S. moneys

136 *Accounting for Price-level Changes—Theory and Procedures*

interchangeable at face amount. Accordingly the monetary items are worth their face amount at maturity, no more and no less, and a gain or loss on holding a balance of "net monetary items" emerges.¹

Arthur Andersen & Co., one of the largest public accounting firms in the world, has expressed the problem in these words:

During a period of inflation, a gain in purchasing power arises from the fact that liabilities can be repaid in current dollars which have a lower purchasing power than the dollars that gave rise to the liabilities; at the same time, cash and receivables lose a portion of their purchasing power. These gains and losses are an integral part of the total effect of inflation on a business.²

Professor Perry Mason has demonstrated the matter with this example:

Assume that a man has \$1000 in a bank account at January 1 and still has the \$1000 at December 31. If the man buys furniture at December 31 for \$1100 which could have been purchased for \$1000 on the previous January 1, he has definitely realized the loss of \$100. If instead he uses the \$1000 to pay a loan at the bank, the \$1000 is apparently just as good at the end of the year as it was at the beginning, since the bank loan calls for a certain number of dollars, not a certain amount of commodities or services. A more precise analysis of the situation, however, would indicate that the purchasing-power loss on the cash had been offset by a purchasing-power gain on the liability.³

Professor A. R. Prest has said:

If in fact current liabilities were to exceed current assets for any one firm, then it would stand to gain from a rise in prices.⁴

Whilst conventional accounting always reports all monetary items in the balance sheet in current dollars, the purchasing-power gains and losses referred to above are not taken into account in the profit-determination process. That is, they are not calculated at all, and therefore do not appear in the profit and loss account.

¹*Reporting the Financial Effects of Price-level Changes*, p. 11.

²*Accounting and Reporting Problems of the Accounting Profession*, 2nd ed. (Arthur Andersen & Co., 1962), p. 13.

³*Price-level Changes and Financial Statements—Basic Concepts and Methods*, p. 9.

⁴*Accounting Research*, vol. 1, p. 394.

When prices are rising, skilful managements hedge against the rising prices in a number of ways, and some of the more obvious methods are to avoid carrying monetary assets of any size, and to work on extended credit, if possible, in a prudent fashion. "Companies which are in a position to assume the risks of operating with a higher proportion of borrowed working capital will to that extent be able to hedge the gains and losses on current monetary items."⁵

However, neither the results of good financial management such as this, nor the poor results of those managements which do not hedge in this way, are revealed directly in the profit and loss accounts of conventional accounting. As stated above, the losses and profits that occur through having monetary assets and current liabilities when prices are rising (and vice versa when prices are falling) must be calculated and brought into the profit-determination process. This is essential if real profit is to be known, and if the efforts of managements in such times are to be evaluated.

The most extensive published study of gains and losses on monetary accounts is that made by William A. Paton, Jr. (*A Study in Liquidity*, University of Michigan, 1958). He calculated the effect of inflation upon the short-term monetary items of fifty-two nonfinancial companies for the period 1940–1952. Only two companies showed a net gain. . . . He estimated that the average loss for all United States corporations (excluding banks and insurance companies) was over \$1 billion a year.⁶

If profits are being overstated in this way (in addition to the ways shown in the two previous chapters), there is then an added danger that capital is being paid out in the form of dividends and that the capital structures of many firms are not being protected or maintained.

That it is necessary to calculate losses on monetary assets (and profits on current liabilities) during times of changing price levels is demonstrated by an adaption of a situation created by

⁵Accounting Research Study No. 6, *op. cit.*, pp. 142–143.

⁶*Ibid.*, p. 143.

Professor R. J. Chambers.⁷ It is assumed here that all prices move in the same direction at the same rate.

The consequences of a shift in price levels may be demonstrated as follows:

Assume that a firm has monetary assets M , non-monetary assets N , current liabilities L , capital C , at the beginning of a period. Assume further that it engages in no transactions during a period in which the price level rises from 1 to $(1 + p)$, p being the percentage rise in relation to a base 1. The position at the beginning then is:

$$M + N = L + C. \quad (1)$$

Multiply throughout by $(1 + p)$ to recognize the effect of the rise in prices during the year.^{7a}

$$M(1 + p) + N(1 + p) = L(1 + p) + C(1 + p). \quad (2)$$

As, by assumption, the firm has the same monetary assets and current liabilities at the end of the year, it helps to restate the above equation as follows:

$$M + Mp + N + Np = L + Lp + C + Cp \quad (3)$$

and by transposing the Mp , the equation can be shown as

$$M + N + Np = L + C + Cp + (Lp - Mp). \quad (4)$$

It will be noticed that the last term $(Lp - Mp)$ is the net loss or gain on holding monetary items.

After subtracting eq. (1) from eq. (4), we have

$$Np = Cp + (Lp - Mp) \quad (5)$$

and by transposing, the following is arrived at:

$$Cp = Np + Mp - Lp. \quad (6)$$

Therefore, in order to "protect" the capital (i.e. by Cp), it is necessary to supplement the automatic increase in non-monetary assets (Np by the loss on holding the monetary assets Mp , but after allowing for the gain on current liabilities Lp).

⁷*Towards a General Theory of Accounting* (the Australian Society of Accountants Annual Lecture, the University of Adelaide, 1961), pp. 35-36.

^{7a}To multiply through by $(1 + p)$ is necessary if the firm is to be in *exactly* the same situation at the end of the year.

All of this can be included in the accounts by these two entries.

- | | | |
|--|-----------------|-----------------|
| 1. Non-monetary assets (fixed assets) | Dr. Np | |
| Revaluation Reserve A/c | | Cr. Np |
| (Being increase in current value of non-monetary assets.) | | |
| 2. Loss on holding net monetary assets | Dr. $(Mp - Lp)$ | |
| Capital Reserves A/c | | Cr. $(Mp - Lp)$ |
| (Being loss on holding net monetary assets during the period.) | | |

Note: It should be stressed again that no great importance is placed on the exact titles of the capital reserve accounts in each case.

In the second entry above, the $(Mp - Lp)$ would, of course, be a minus quantity in a minority of cases.

“Holding Gains and Losses”

Chapter 8 was devoted to a discussion on “holding gains and losses” in connection with non-monetary assets. It was explained how some supporters of the use of a general index for profit-determination purposes advocate treating as profits and losses any movements in the specific indexes of non-monetary physical assets, over and below (respectively) the general index of the time. It was claimed in this work, however, that such holding gains and losses are of a capital nature and must not come into the determination of profit.

It may be thought, therefore, that what has been said so far in this chapter concerning the recognition of profits and losses on monetary items held is inconsistent with the ideas expressed in Chapter 8. This is not so.

A general-index man would calculate his profits and losses (on monetary items held) on the *total* movement in the general index and not just on the differences (if any) between the movements in the general index and the relative specific index. With non-monetary physical assets, the general-index man treated the movements in the general index itself as affecting *capital* and not profits.

Similarly, the specific-index man treats as profits and losses the *total* movement (up or down) in the relative specific indexes that he associates with the monetary items. With non-monetary

physical assets, the specific-index man treated the movements in the various specific indexes as affecting *capital* and not profits.

Long-term Liabilities

In this category are included such items as interest-bearing deposits, debentures, unsecured notes, bonds, long-term loans from banks, and other items of “permanent” capital—but not including capital paid in by shareholders. Amounts owing to suppliers, accruals, and other short-term borrowings are not included either, of course.

It will be contended that as far as the firm itself is concerned there is no “profit” on these items of long-term debt when prices are rising—and no “losses” when prices are falling. All of these long-term debt items form part of the permanent capital of the firm in the same way as do amounts contributed by shareholders. Therefore, from the point of view of the firm, to calculate “profit” on items of long-term debt would be just as illogical as calculating “profit” on funds received from shareholders, i.e. in times of rising prices.⁸ It cannot make “profits” out of one sort of capital and not out of another.

It was stated in Chapter 8 that “profit for a firm during any period of time is the maximum amount expressed in dollars which, if there were no additional investments during the period, could be distributed by the firm to its beneficiaries without impairing its operating capacity”.

Those who wish to calculate “profits” on long-term debt and bring these into the profit and loss account in times of rising prices have a different notion of the capital which must be maintained unimpaired before profit can be recognized. They are mainly concerned with the maintenance of shareholders’ funds, alone, and not the overall real physical capital of the firm.

For example, Mr. L. A. Wilk when advocating the calculation of profit on debentures says, “debentures . . . are liabilities on

⁸It should be mentioned here that the author has shifted ground a little since publishing his paper in the *Australian Accountant* of July 1961.

the company and do not represent part of the company's capital".⁹ And Professor R. C. Jones says that the taking into account of *all* purchasing-power gains and losses (i.e. on long-term debt, too) "probably gives the most realistic measure of the total effect of inflation or deflation on the *common stock*".¹⁰

In Chapter 7 it was found that those who support the use of one general index, consciously or subconsciously want to see the shareholders' interests protected in a way which would enable them to receive the same number of purchasing-power units should the firm ever go into liquidation. On the other hand, it was found that those who placed the interests of the firm first were more likely to carry out the necessary adjustments with the aid of specific indexes.

The same two schools differ on this matter of "profit" on long-term liabilities. Those who consciously or subconsciously look at the matter from the shareholders' side of the fence advocate including in the profit-calculation process the "profit" on long-term debt when prices are rising; while those on the other side of the fence, i.e. those who look on the problem from the viewpoint of the firm, consider that there is no "profit".

In other words, there is a difference in thinking between those who look from without and those who look from within. It must be remembered that the accounting records are those of the firm and *not* those of the shareholders. Shareholders have their own sets of accounts in their own ledgers. This is consistent with what is commonly known as the "entity concept of accounting", i.e. the concept of the firm as a separate and distinct entity.

"Because corporate assets are considered owned by the corporation itself and all corporate obligations are considered the obligations of the corporation itself, there is no significant distinction to be made between common shareholders, preferred shareholders, bondholders, and other long-term obligees. In accordance with this view, financial reports represent an accounting by the corporation to all those having claims against it."¹¹

⁹*Accounting for Inflation*, p. 81.

¹⁰*Price-level Changes and Financial Statements*, p. 82. Emphasis added.

¹¹Sprouse, R. T., *Accounting Review*, July 1957, p. 370.

142 Accounting for Price-level Changes—Theory and Procedures

Although the payment of dividends to shareholders “is consistent with and necessary to the corporation’s striving for survival”,¹² ordinary shareholders have claims against the firm on liquidation only. They have no claim to profits until such time as dividends might be declared, and profits from the viewpoint of the firm can only exist if they can be distributed without impairing the physical capital of the firm.

A series of simple examples is now given in order to show that it is not possible to bring in “profit” on long-term liabilities during times of rising prices, i.e. from the firm’s viewpoint. To do so in each case results in a weakening of the firm’s physical structure.

Example 1. The situation of a firm at the beginning of a year is

	\$		\$
Shareholders’ funds	100,000	Land	200,000
Debentures @ 5%	100,000	(Rented at \$20,000 p.a.)	
	\$200,000		\$200,000

Both rent and interest are paid on the last day of the year, but during the year the specific prices of all things rise by $7\frac{1}{2}\%$.

The financial statements at the end of the year if profit on long-term debt is *not* calculated will be:

PROFIT STATEMENT

	\$
Rents received	20,000
Less Interest paid	5,000
	Profit = \$15,000

BALANCE SHEET

	\$		\$
Shareholders’ funds	100,000	Land (revalued)	215,000
Debentures	100,000	Cash	15,000
Capital reserves	15,000		
Profits	15,000		
	\$230,000		\$230,000

¹²Li, D. H., *Accounting Review*, April 1960, p. 262.

It will be noticed that the profit could be distributed and the physical capital of the firm would not be impaired in any way. The land would not have to be touched.

The financial statements at the end of the year if profit is calculated on long-term debt will be:

PROFIT STATEMENT		\$
Rents received		20,000
"Profit" on debentures (i.e. @ 7½%)		7,500
		27,500
Less Interest paid		5,000
		Profit = \$22,500

BALANCE SHEET			
	\$		\$
Shareholders' funds	100,000	Land (revalued)	215,000
Debentures	100,000	Cash	15,000
Capital reserves*	7,500		
Profits	22,500		
	\$230,000		\$230,000

(*Land revaluation \$15,000 less debit of \$7500 on raising of "profit" on long-term debt.)

It will be noticed that in order to distribute this profit of \$22,500, some of the land would have to be sold. Profit does not have to exist in a cash form to exist at all, but it does have to exist in some form *in excess of* the physical capital of the firm for the firm to have earned a profit. In this case profits are overstated by \$7500!

The firm could raise more debt in order to distribute this additional amount of \$7500 to shareholders, but this would be a reshuffling amongst those who had supplied the firm with its capital funds. It would amount to a return of capital to one set of suppliers of capital funds, offset by the additional contributions received from others.

Similarly, the firm could issue more shares for \$7500 to the same shareholders in order to cover the dividends paid to them totalling the same amount! But the firm should not have to

144 Accounting for Price-level Changes—Theory and Procedures

obtain more capital of any kind to maintain the same level of business. If it does have to, profits have been overstated.

Example 2. In this example the same set of circumstances exists except that only half of the firm's assets is in the form of land. The other half is invested in long-term cash assets returning 10% p.a.

The situation at the beginning of the year is:

	\$		\$
Shareholders' funds	100,000	Land (rented @	
Debentures @ 5%	100,000	\$10,000 p.a.)	100,000
		Long-term cash	
		assets @ 10%	100,000
	\$200,000		\$200,000

Specific prices of all things rise again by $7\frac{1}{2}\%$ in the year.

The financial statements at the end of the year if profit on the debentures is *not* calculated will be:

PROFIT STATEMENT		\$	\$
Rents received			10,000
Interest received			10,000
			20,000
Less Interest paid	5000		
Loss on monetary assets held during the rise in prices (i.e. @ $7\frac{1}{2}\%$)	7500		
			12,500
		Profit =	\$7,500

BALANCE SHEET			
	\$		\$
Shareholders' funds	100,000	Land (revalued)	107,500
Debentures	100,000	Long-term cash	
Capital reserves*	15,000	assets	100,000
Profits	7,500	Cash	15,000
	\$222,500		\$222,500

(*Land revaluation \$7500 plus credit of \$7500 on raising of loss on monetary assets held.)

It will be noticed that if the profit were distributed, total assets of \$215,000 would still remain. This means that the firm's physical capital has not been impaired even though all prices have risen by $7\frac{1}{2}\%$, and that the firm could still operate at the same physical volume.

The financial statements at the end of the year if profit is calculated on long-term debt will be:

PROFIT STATEMENT

	\$	
Rents received	10,000	
Interest received	10,000	
"Profit" on debentures (i.e. @ $7\frac{1}{2}\%$)	7,500	
	<hr/>	
	27,500	
Less Interest paid	5000	
Loss on monetary assets held during the rise in prices (i.e. @ $7\frac{1}{2}\%$)	7500	
	<hr/>	
	12,500	
	<hr/>	
Profit =	\$15,000	
	<hr/>	

BALANCE SHEET

	\$		\$
Shareholders' funds	100,000	Land (revalued)	107,500
Debentures	100,000	Long-term cash assets	100,000
Capital reserves*	7,500	Cash	15,000
Profits	15,000		
	<hr/>		<hr/>
	\$222,500		\$222,500
	<hr/>		<hr/>

(*Land revaluation \$7500 plus credit of \$7500 on raising of loss on monetary assets less debit of \$7500 on creation of "profit" on debentures.)

It will be noticed in this case that if the profit of \$15,000 were distributed, total physical assets of only \$207,500 would remain, and not the required \$215,000 needed to keep pace with the rises in prices. In other words, the whole of the \$15,000 cannot be considered to be profit as far as the firm itself is concerned—only \$7500 can.

146 Accounting for Price-level Changes—Theory and Procedures

Example 3. This is similar to the above situations, but here all of the assets are in the form of long-term cash assets, i.e. the firm is a finance company. The position at the beginning of the year is:

	\$		\$
Shareholders' funds	100,000	Long-term cash	
Debentures @ 5%	100,000	assets @ 10%	200,000
	\$200,000		\$200,000

Specific prices of all things rise again by $7\frac{1}{2}\%$ in the year.

The financial statements at the end of the year if profit on the debentures is *not* calculated will be:

PROFIT STATEMENT			
	\$		\$
Interest received			20,000
<i>Less</i> Interest paid	5,000		
Loss on monetary assets held during the rise in prices (i.e. @ $7\frac{1}{2}\%$)	15,000		
			20,000
Profit =			Nil

BALANCE SHEET			
	\$		\$
Shareholders' funds	100,000	Long-term cash	
Debentures	100,000	assets	200,000
Capital reserves*	15,000	Cash	15,000
Profits	—		
	\$215,000		\$215,000

(*Credit of \$15,000 on raising of loss on monetary assets.)

A perusal of these statements reveals that the firm has just broken even for the year. Its assets total \$215,000, an amount just sufficient to maintain the same volume of business in real terms following on the $7\frac{1}{2}\%$ rise in all prices.

However, if profit *is* calculated on long-term debt, the financial statements will be:

PROFIT STATEMENT

	\$	\$
Interest received		20,000
“Profit” on debentures (i.e. @ 7½%)		7,500
		27,500
Less Interest paid	5,000	
Loss on monetary assets held during the rise in prices (i.e. @ 7½%)	15,000	
		20,000
Profit =		\$7,500

BALANCE SHEET

	\$		\$
Shareholders' funds	100,000	Long-term cash assets	200,000
Debentures	100,000	Cash	15,000
Capital reserves*	7,500		
Profits	7,500		
	\$215,000		\$215,000

(*Credit of \$15,000 on raising of loss on monetary assets less debit of \$7500 on creation of “profit” on debentures.)

Once more it can be seen that if the “profits” of \$7500 were distributed, assets would be reduced to \$207,500 and the real physical capital of the firm would be reduced below the required \$215,000 needed to maintain the assets of the firm in the same real worth. Therefore, as far as the firm is concerned, there are no profits of \$7500!

Example 4. In case it is of assistance in making this matter clearer, this example is included in order to examine the position when a firm is almost completely financed by long-term debt. A finance company is envisaged again, but any of the above three asset structures could have been used here.

148 Accounting for Price-level Changes—Theory and Procedures

The position at the beginning of the year is:

	\$		\$
Shareholders' funds	1	Long-term cash	
Debentures @ 5%	200,000	assets @ 10%	200,001
	<u>200,001</u>		<u>\$200,001</u>

Once more all prices are assumed to have risen by $7\frac{1}{2}\%$ during the year.

The financial statements at the end of the year if profit on the debentures is *not* calculated will be:

PROFIT STATEMENT

	\$	\$
Interest received		20,000
Less Interest paid	10,000	
Loss on monetary assets held during the rise in prices (i.e. @ $7\frac{1}{2}\%$)	<u>15,000</u>	
		<u>25,000</u>
	Loss =	<u>\$5,000</u>

BALANCE SHEET

	\$		\$
Shareholders' funds	1	Long-term cash	
Debentures	200,000	assets	200,001
Reserves*	15,000	Cash	10,000
		Loss	<u>5,000</u>
	<u>\$215,001</u>		<u>\$215,001</u>

(*Credit of \$15,000 on raising of loss on monetary assets held.)

It will be noticed that even though more interest was received than was paid out, the real position of the firm has deteriorated during the year by \$5000. This is revealed both by the profit statement and by the assets at end of only \$210,000. With price rises of $7\frac{1}{2}\%$, assets of \$215,000 should be on hand at the end of the period in order to maintain the same real position.

If profit *is* calculated on long-term debt, the financial statements will be:

PROFIT STATEMENT			
	\$		\$
Interest received			20,000
“Profit” on debentures (i.e. @ 7½%)			15,000
			35,000
<i>Less</i> Interest paid	10,000		
Loss on monetary assets held during the rise in prices (i.e. @ 7½%)	15,000		
			25,000
Profit =			\$10,000

BALANCE SHEET			
	\$		\$
Shareholders' funds	1	Long-term cash	
Debentures	200,000	assets	200,001
Profits	10,000	Cash	10,000
	\$210,001		\$210,001

Notice here that if the “profits” of \$10,000 were distributed to the solitary shareholder, the firm would end the year with the same cash assets with which it started the period, i.e. \$200,001, even though prices had risen by 7½%. Obviously, its real “net worth” had depreciated. Whilst the *shareholder* would make a profit of \$10,000, the firm would not!

In all of the above examples “profits” should not be calculated on debentures and it is hoped that it has been proved that as far as the firm itself is concerned it is illogical to calculate profits on long-term liabilities of any kind. This is permanent capital in the same way that funds contributed by shareholders are. When long-term debt is repaid eventually, it must be replaced by some other form of long-term debt or shareholders’ funds if the firm

is to maintain the same volume of business. This is why it is “permanent”.

The entire investment in the firm is the same regardless of the amount represented by stockholders' equity and the amount represented by bondholders' equity. Therefore, for purposes of determining the amount of total investment to be maintained, the gain or loss due to the holding of long-term debt is irrelevant. Only the gains or losses from the holding of monetary working capital during periods of price changes should be considered as changes in total equity¹³

of manufacturing and trading firms.

However, if debenture holders themselves make a loss during a period of rising prices, who makes the profit? It has been shown that the firm does not. It is the shareholders who profit—even if this be in an indirect way. It is a reward for the risks which they take when they invest in this way. That ordinary shareholders *do* profit can best be demonstrated by yet another example, but in order to make the point clearer, it will be assumed that the specific index of land increases by 100% during the year in this case.

The position of the firm at the beginning of the year is:

	\$		\$
Shareholders' funds	100,000		Land 200,000
Debentures @ 5%	100,000		
	_____		_____

When land prices rise by 100%, i.e. in this case to \$400,000, debenture holders still have a legal claim to only \$100,000 and no more. This in itself strengthens the position and the security of the ordinary shareholders.

Further, when rents rise, too (and increased revenues would be typical in most industries when prices rise), debenture holders are still able to claim only 5% interest on the face value of their script. This, then, makes it *possible* for profits, dividends and share prices at the stock exchange to *more* than double. Even if the increased earnings are retained, the stability of the firm is strengthened, to the indirect benefit of the shareholder, and possibly to his direct benefit (again) at the stock exchange.

¹³Hendriksen, E. S., *Price-level Adjustments of Financial Statements*, pp. 86-88.

If prices double in this way, it would be in the interests of the firm, in its efforts to live long and to prosper, to at least double the size of dividends paid to ordinary shareholders. In this way stock-exchange prices of shares should react in a similar fashion and so improve both the public image of the firm and the prospects of obtaining further capital from the public for future possible expansion programmes.

So the shareholders do profit at the expense of the debenture holders in the same firm in times of rising prices, in that their prospects, rights, dividends, and available exchange prices for their shares all tend to improve greatly in most cases. They obtain a bigger "stake" in the business. "Changes in the purchasing power of senior securities represent shifts in the real equities of various classes of permanent investors and as such should not be allowed to affect the income account of the corporation itself."¹⁴

Therefore, it is contended that from the viewpoint of the firm, losses should be calculated on all monetary *assets* when prices are rising (and vice versa), and that profits should be calculated on current liabilities (only), i.e. those which do not form part of the firm's permanent liabilities.

It is possible that some might feel that the arguments put forward in this chapter against the calculation of profits on long-term liabilities (when prices are rising) could be extended to current liabilities. In case this is so, it should be explained that current liabilities form part of the *net* current working monetary *asset* pool which is financed by the permanent capital of the firm. Current liabilities do not form part of the permanent capital itself.

Every endeavour should be made to keep this net current working monetary asset pool as low as possible when prices are rising (within the realms of safety) and as high as possible when prices are falling. The firm benefits if this is done and this benefit must be recognized and recorded.

¹⁴Jones, R. C., *Price-level Changes and Financial Statements*, p. 82.

Preference Shareholders

From what was said in the preceding section concerning long-term debt, it is obvious that funds contributed by preference shareholders form part of the permanent capital of the firm, too, and therefore, from the viewpoint of the firm, there can be no profit or losses on these funds when prices rise or fall.

As with long-term debt, this point of view is not accepted by all. For example, Mr. L. A. Wilk says:

there is no reason to maintain the original purchasing power of preference capital since it is only entitled to a portion of the company's assets equivalent to the nominal value of such preference shares. Capital maintenance reserve will therefore be restricted to maintaining the purchasing power of *ordinary* capital.¹⁵

And the following is an extract from Accounting Research Study No. 6:

In general, the stockholders' equity, as the residual claim to net assets, is nonmonetary in character. The only important exception is the equity of the preferred stockholders. This is usually a fixed dollar amount; it may involve a retirement premium in case of redemption, or other such modifications of the par value, but these are unrelated to changes in the price level. The preferred stock account, therefore, should ordinarily be treated as a monetary item and the purchasing-power gain or loss should be computed in the same manner as that of a monetary liability. The result during a period of rising prices is that the loss in purchasing power of the preferred stockholders' claim becomes an increase in *common* stockholders' equity.¹⁶

It will be noticed from each of the above quotations that the idea of each author is to compute the profit of the ordinary shareholders—and not that of the firm itself. As pointed out previously, the accounting records are those of the firm and not those of the shareholders, and therefore the profit to be determined is that of the firm.

¹⁵*Op. cit.*, p. 80. Emphasis added.

¹⁶*Reporting the Financial Effects of Price-level Changes*, p. 141. Emphasis added.

When Are the Profits and Losses on Monetary Items Realized?

It has been claimed here that from the viewpoint of the firm it is necessary to include in profit determination, losses on all monetary assets held and profits on current liabilities owed, e.g. to suppliers, as accruals, etc., during times of rising prices (and vice versa when prices are falling).

But when are these profits and losses realized? Does realization take place (a) when the cash is actually paid to suppliers, when the cash is collected from debtors, and when liquid cash is finally spent, etc., or (b) are the profits and losses on these items realized immediately the changes in the relevant price levels occur, irrespective of when cash collections or payments are actually made?

This question is probably of more concern to those who advocate calculating profits and losses on long-term liabilities and funds contributed by preference shareholders, because with these items much more time can elapse between the shift in the relevant index and the repayment (if any) of the funds. But the same principle is involved with short-term monetary assets and liabilities. Further, as this work advocates the inclusion, in the firm's profit-determination process, of profits and losses on long-term monetary *assets* in times of changing prices (i.e. in those cases where this kind of asset does exist), it is necessary for this matter of realization to be discussed here.

Although Arthur Andersen & Co. seem to advocate the immediate recognition of losses on monetary assets as soon as the increase in the index occurs, their attitude to profits on monetary liabilities during rising prices falls between (a) and (b) in the above question. This company advocates the spreading of such gains over either the life of the assets purchased with the funds or over the life of the debt itself.¹⁷ The spreading of the gains over the lifetime of the assets would be obtained by crediting the asset accounts and not the profit and loss account. This

¹⁷*Op. cit.*, pp. 16-17.

would then reduce future depreciation, etc. If the gains are spread over the life of the debt itself, then Arthur Andersen & Co.'s idea is to recognize the gain currently on an accrual basis but to defer it and take it into income over the life of the debt as an adjustment of the cost of borrowing the money.¹⁸

However, this author contends that the actual gain or loss occurs in each case *as soon as* the relevant price index moves; and therefore it must be recognized at that time, as far as profit determination for the firm is concerned. The profits or losses to the firm are real in each case as soon as the prices move and there seems to be no valid case for deferring these in any way for profit-determination purposes. If \$10,000 cash is held and prices double overnight the firm is worse off immediately. Why delay recognition of the fact until the money is spent?

In support of this contention Professor Hendriksen says:

These gains and losses from the holding of monetary assets and monetary current liabilities should be included in the computation of net income to the enterprise. This represents an important part in the ability of the firm to maintain the purchasing power of its investment. Some authors do not consider these gains and losses to be "realized" until the assets have been exchanged or converted and the liabilities paid. However, realization can be assumed to have taken place as soon as there is objective evidence of value. This is the concept applied to this study that leads to the conclusion that the monetary gains and losses are realized as soon as there is a change in the price level.¹⁹

A change in the relevant index is certainly objective evidence, and the values of the monetary assets and monetary current liabilities to the firm will most certainly have changed.

This extract from Accounting Research Study No. 6 is very clear on this matter:

A distinction is sometimes made between "realized" and "unrealized" losses and gains on monetary accounts. Since the trend of prices may change before a monetary asset is collected or unitized, or before a monetary liability is discharged, it is often maintained that a purchasing-power loss or gain is unrealized until cash is spent or a liability is paid.

¹⁸*Op. cit.*, p. 17.

¹⁹*Price-level Adjustments of Financial Statements*, p. 19.

This concept of "realized" and "unrealized" purchasing-power gains and losses puts the emphasis upon cash receipts and disbursements rather than on the concept of accrual accounting. The gains and losses have occurred in much the same sense that interest has accrued, or that bond discount has accumulated or been amortized. The cash balance could not be in more realizable form and the other current monetary items might be characterized as cash-receipts-in-process or cash-payments-in-process. If we are willing to recognize revenue on the basis of a receivable, we should be willing to recognize a loss or gain in purchasing-power on the same basis.²⁰

Professor William A. Paton's contention that

... the gain resulting from an increase in the purchasing power of the dollar subsequent to the acquisition of a sum of cash, is unrealized so long as the cash continues to be held, and is realized—brought to a final determination—when the fund in question is expended,²¹

seems to be well answered by John W. Coughlan when he said:

... the gain or loss results from *holding* money claims during a period of changing prices, not from *disposing* of the money claims at some particular level of prices.²²

Which Index for Calculating Profits and Losses on Monetary Items?

In order to calculate the profit and loss on monetary items, the "general-index man" will, of course, use the same index he has used for all of his price-level adjustments for profit-determination purposes, i.e. the consumer price index or the economic deflator, etc. However, the "specific-index man" will have a choice of indexes, and the one he will use will depend upon the circumstances in each case. All will depend on the reason for which the monetary item is held.

For example, Professor Perry Mason cited the case of the man with \$1000 in the bank throughout the year who finally purchased furniture for \$1100 that he could have purchased at the beginning of the year for \$1000.²³ This man incurred a loss and the

²⁰ *Reporting the Financial Effects of Price-level Changes*, pp. 42-43.

²¹ *Advanced Accounting* (Macmillan, 1941), p. 739.

²² *Accounting Review*, January 1955, p. 113.

²³ *Price-level Changes and Financial Statements—Basic Concepts and Methods*, p. 9.

calculation of this loss is based on the movements in the prices of those things he intended to purchase with the money, i.e. furniture. The loss in this case could have been calculated throughout the year at monthly rests with the aid of a specific index for furniture, or, better still, with the aid of progressive monthly prices of the items that were to be purchased.

The situation for the active firm of any size is obviously more complex and individual analysis of each item is essential in each case.

Accounts payable (creditors) originate in most cases from the purchasing of trading stocks or raw materials, and where this is so, the profit (in times of rising prices) should be calculated by using a specific index representing the movements in the prices of the stocks concerned. If only one stock item is involved, then there would be no need to make up or locate an index. The movements in the unit prices themselves could be used. On the other hand, where many items are handled, the compilation or selection of a representative index is necessary if accurate results are to be obtained. It could be that a high degree of correlation exists between movements in the prices of stocks handled and the movements in the wholesale price index. If this is so, then the wholesale price index would be the one to use. It could be that a government statistical bureau or some other body produces some other index series which represents with fair accuracy the movements in prices of those stocks handled by the individual firm. If great difficulties are encountered in the selection or compilation of an index to be used in the calculation of the profit (or loss) on accounts payable, it should be remembered (once more) that it is better to be approximately correct than to be precisely wrong. This philosophy also applies to the selection of indexes for other monetary items, and, in fact, to most other aspects of accounting for price-level changes.

Accounts receivable (debtors) originate in most cases from the sale of trading stocks, and where this is so the same index used for accounts payable would be used for retailers and wholesalers, i.e. where no further processing has had to take place. Where

the accounts receivable figure is made up of sales of manufactured articles, then the specific index to be used to calculate the loss on this figure (still assuming rising prices) will need to comprise the elements of costs in each case, e.g. raw materials, productive labour and manufacturing expenses.

Once more it is possible that a high degree of direct correlation may be discovered to exist between the movements of costs of articles produced and the movements in some index series maintained by a government bureau of statistics or some other body.

Where accounts payable and accounts receivable figures do not relate to the purchases or sales of trading stocks, the same principles outlined above still apply. It will be necessary to examine the price movements in the items involved in an endeavour to compile or select a suitable index to be used in the calculation of the profits or losses on these monetary items.

Professor Goudekot tells us that the Philips Electrical Companies use the "cost of living index" for the calculation of profits and losses on *all* monetary items,²⁴ and although this will give results of greater accuracy than if no such calculations at all were made, it is felt that more precision could be obtained if an index more specific for the purpose were to be compiled or located.

With regard to holdings of cash and bank overdrafts, the reasons for the existence of these must be investigated in each case. In the Perry Mason example above, it was seen that the \$1000 was being held for the purpose of purchasing furniture, and in this case the reason for the existence of the cash fund was a simple matter. In practice, with firms of any size, the reasons for the existence of cash funds or non-permanent bank overdrafts would not be so obvious in most cases, and therefore the choice of an index for the calculation of profits or losses on these items in times of changing prices would not be so simple.

Probably the payment of suppliers would feature largely in the reasons behind the existence of cash funds or bank borrowings

²⁴*Journal of Accountancy*, July 1960, p. 41.

in many or most cases, and it could be, therefore, that the same index used for the calculation of profits and losses on accounts payable should be used here, too. The payment of wages and operating expenses would also be important reasons in many cases, and it could be considered that these are closely related to a consumer price index or some other cost of living index.

If it is considered that the cash funds or non-permanent bank borrowings relate both to the payment of suppliers and the payment of wages and operating expenses, then some average of the specific index for trading stocks and the consumer price index could give more accurate results.

If investigations show that the index representing the movement in the prices of trading stocks is to be used to calculate the profits and losses on accounts payable, account receivable *and* bank balances (plus and minus), then it is obvious that the index need only be applied to the *net* balance of all these monetary items (i.e. on *net current* monetary items in most cases).

It is obvious that the compilation or selection of the suitable index or indexes to be used for the calculation of profits and losses on monetary items in times of changing prices might not involve a high degree of objectivity from the viewpoint of the casual observer, but neither might the methods and rates used to depreciate the fixed assets of the same firm. In each firm the position of monetary items must be analyzed and the index or indexes chosen after careful thought. If this is done, more accurate results will be obtained than if an index such as the consumer price index were used without any thought whatsoever.

At this stage the late Geo. O. May's statement on p. 63 of this book becomes extremely relevant once more.

The Computation of Profits and Losses on Monetary Items

It has been contended in this chapter that the profit-determining process must include profits and losses on monetary assets and non-permanent monetary liabilities in times of changing prices.

It has also been contended that the calculation of these profits and losses must be made with the aid of indexes specific to each monetary item in each case. But how are the actual physical computations to be made?

During a year many movements take place in monetary items such as accounts payable, accounts receivable, etc. In most cases, therefore, it is obvious that the profits and losses during a year cannot be calculated on the opening balance for the year only. For example, an accounts payable balance of \$100,000 on 1 January could be reduced to \$20,000 on 2 January and remain as low as this all the following year. It would be incorrect, therefore, to make all calculations on the opening balance only. In this case further credit purchases and payments to suppliers throughout the period must be taken into account, and the same principles apply to accounts receivable and other monetary items on which profits and losses are to be calculated if the relevant prices change.

Further, in order that monthly profit statements may be supplied to management, it is necessary that these calculations be carried out each month. These monthly calculations are also necessary if the profits and losses on monetary items are to represent an *average* figure for the accounting year. It will be remembered that the adjustments recommended in previous chapters for the calculation of depreciation and costs of goods sold figures produced these figures in *average* current prices for the period, and not *end-of-year* current prices. It was explained at the time that this enabled them to be matched with revenues (sales, etc.) which are automatically recorded in average current prices.

It is recommended that the calculation, using the month's movement in the relevant index, be made in each case by calculating the profit or loss on the opening balance for each month (which assumes that it remained constant throughout the month), and then adjusting this figure to take care of the net changes in the balance in the monetary item that took place during the month.

160 Accounting for Price-level Changes—Theory and Procedures

The following example shows an application of this recommendation.

	\$
Accounts receivable balance on January 1st	100,000
Credit sales for January	200,000
Collections during January	180,000
Accounts receivable balance on January 31st	120,000
During January the index for stock in trade rose from 100 to 106.	

The loss incurred by holding this monetary asset during this price rise was:

$$\begin{array}{rcl}
 \frac{6}{100} \times \$100,000 \text{ (i.e. the opening balance)} & = & \$6000 \\
 \\
 \frac{3}{100} \times \$20,000 \text{ (i.e. the net change)} & = & 600^* \\
 \\
 \text{Total loss} & = & \underline{\underline{\$6600}}
 \end{array}$$

*This assumes that the sales and collections were steady throughout the month and that the price rise came in the middle of the month. More accurate calculations could be made if more specific information were available, but it is thought that the sum of monthly calculations such as this one will give a figure with a high degree of accuracy for the year.

If this were the only monetary item, the journal entry at the end of this month in this regard would be:

Loss on holding monetary assets	Dr. \$6600	
Capital reserves		Cr. \$6600

This "loss on holding monetary assets" item of \$6600 would then appear in the Profit and Loss Account for the month. In this way the month's profits would reflect the fact that a loss had occurred through holding certain monetary assets during price rises that took place during the month. That is, when these amounts are collected they will be capable of purchasing fewer items of trading stock.

It is thought that the calculation of losses on accounts receivable should be based on the gross figure and not on the figure net of any provisions for doubtful debts. Capital is tied up in these debtor accounts until such time as they are paid or written off as bad debts. Then, if and when some accounts are written off as bad, there is need only to include the unadjusted amount of the

bad debt in the profit and loss account. The additional loss by holding these as assets during a period of rising prices would have been calculated already.

Profits and losses on liabilities (provisions) for dividends and taxation should be calculated only if there is any delay in paying these items. They are usually brought into the accounts at the end of a financial year for the purpose of arriving at the net profit of that year and for the purpose of showing the intended disposal of that profit. The real liability does not come into existence until sometime early in the next financial year and this is why any profits or losses on these items in times of changing prices should be calculated only if there is any delay in paying. It might be argued by some that it is not correct, therefore, to calculate profits or losses on cash balances built up to pay taxes and dividends. This, however, does not seem to be a sound argument as the cash should be put to work in some way to hedge against rising prices (for example). The effect of management's inability to do this should be revealed in the accounts.

Investments

In the previous section the case was given of the man who held \$1000 while the furniture he intended to buy rose in price from \$1000 to \$1100. It was contended that he lost an amount of \$100. If he had invested this amount of \$1000 in shares that increased in value at the stock exchange to \$1100 during this same period, there would have been no loss or gain.

Further, if he had invested the amount of \$1000 in shares which realized \$1200 when he sold them to buy the furniture, he would have shown a profit of \$100.

So, then, it can be established that to the extent that investments of surplus cash increase in value at a rate greater than the prices of those things for which the cash is eventually intended, there is a profit. Similarly, to the extent that such investments do not increase in value at the same rate as those things for which the cash is eventually intended, there is a loss.

162 Accounting for Price-level Changes—Theory and Procedures

(Where temporary investments are made in securities which do *not* fluctuate in value and which can always be cashed for their face value, there is a total loss or gain to the extent that the prices of the “furniture” rise or fall. The situation here is identical to that of the monetary assets dealt with in the previous section.)

Therefore, despite what has been said in Chapter 8 on “Holding Gains and Losses” it will be contended here that these do occur in the case of investments of *surplus* cash, *but only because* they are a type of monetary asset which does not have a constant value.

In each case it is necessary to compare the movements of the market values of the stocks and shares held with the movements in the prices of those things for which the cash is eventually intended, in order to calculate the profits or losses earned or incurred through holding the investments. If the prices of the “furniture” remain constant and the share prices rise, then the total increase in the share prices at the stock exchange is profit.

It is easy to obtain stock-exchange quotations and to calculate the movements in the values of the stocks and shares held, but it might not be so easy to obtain or measure the movements in the prices of those things for which the cash is intended eventually. In the furniture case it was simple, and it could be that such simple cases might occur with some operating firms. However, in many or most cases, the surplus cash invested is to provide for future expansion, and this occurs often with new companies. In such cases it is necessary to use a specific index of the price movements of those things on which the firm intends spending the money in due course. It might be possible to compile such an index from a knowledge of the prices and the type of capital equipment or trading stocks concerned, or it might be easier (and almost as accurate) to use one of the index series published by a government bureau of statistics or some other body. That is, one series which is found or known to reflect fairly accurately the movements in the prices of the items in question.

A “general-index man” would, of course, treat as profit or loss the difference between the movements of the values of the

stocks and shares and the movements in the general index he uses for all other adjustments. As pointed out previously, this assumes unrealistically that the investments when sold might be invested in anything, and not just the type of asset the company normally deals in or with.

So far in this section attention has been directed mainly to the casual or temporary investment in stocks and shares, i.e. investments made until the surplus cash is required for its main purpose in the firm. What of the *permanent* investment in stocks and shares? What about the firm which has as its sole object or as one of its main objects the investing in stocks and shares?

In such cases the movements in the stock-exchange values of the stocks and shares held should be compared with the movements in the relevant stock-exchange index (or indexes). These indexes are published daily in the financial press. To the extent that the values of shares held increase at a rate greater than the increase in the relevant stock-exchange index (or indexes), then there is a profit to be brought to account—and vice versa. These calculations should be made on a monthly basis at least.

In order to demonstrate the accounting entry necessary to record an increase in the value of some investments in stocks and shares, assume that the stock-exchange value of a portfolio has increased from \$100,000 at the beginning of a month to \$110,000 at the end of the month, and that the specific index of those things for which the cash is eventually intended (or the relevant stock-exchange index) has increased from 100 to only 108 during the same period.

The entry would be:

Investments	Dr. \$10,000 (With the total <i>increase</i> in value of the portfolio.)
Capital reserves	Cr. \$8000
Profit on investments held	Cr. \$2000 (With the amount by which the portfolio increase exceeded the increase in the specific index of those things for which the cash is eventually intended.)

164 Accounting for Price-level Changes—Theory and Procedures

If the specific index of the things for which the cash is intended had increased from 100 to 112 during the same period, the entry would have been:

Investments	Dr. \$10,000	
Loss on investments held	Dr. \$ 2,000	
Capital reserves		Cr. \$12,000

Similarly, if the stock-exchange value of the portfolio had decreased from \$100,000 at the beginning of the month to \$90,000 at the end of the month, and the specific index of those things for which the cash is eventually intended (or the relevant stock-exchange index) had decreased from 100 to only 92 during the same period, the entry would be:

Capital reserves	Dr. \$8000	
Loss on investments held	Dr. \$2000	
Investments		Cr. \$10,000

And lastly, if the specific index of “those things” had decreased from 100 to 88 while the portfolio only decreased in value to \$90,000, the entry would be:

Capital reserves	Dr. \$12,000	
Profit on investments held		Cr. \$ 2,000
Investments		Cr. \$10,000

Here the firm is better off by \$2000 by delaying its purchasing of “those things”.

The absurdity of not bringing to account the current values of investments in stocks and shares and the resultant profits and losses is well demonstrated in Kenneth MacNeal’s famous article, “What’s Wrong with Accounting?” which appeared in *The Nation* (New York) on 7 and 14 October 1939,²⁵ and probably more concisely shown in the following illustration by John W. Coughlan:

A Investment Company and B Investment Company both bought stock in the XYZ Corporation on the same day for \$20 per share. At the end of their fiscal years (which occurred on the same date for both),

²⁵Baxter, W. T. and Davidson, S. (eds.), *Studies in Accounting Theory*, (Sweet & Maxwell Ltd., London, 1962), pp. 60–61.

the stock was worth \$50 a share. That morning, A sold its stock for \$50 a share, and that afternoon bought the same number of shares in the same company for \$50 a share. B retained its stock but elected to carry it on the balance sheet at value. According to S.E.C. regulations, B's gain is unrealized. But A, which only differs from B by having paid commissions to get out of, and then back into the stock has "realized" a gain. Both are subject to subsequent loss, both paid the same amount per share, and both end the period with shares having the same value. What is the value of a rule which states they are in different positions?²⁶

(In the above illustration it is necessary to assume, of course, that the relevant specific indexes of the "furniture" remain constant, i.e. if there is to be a total "gain".)

Assume once more that the specific index of the "furniture" remains constant and that a firm "has purchased securities for \$100,000 for speculative reasons". Edwards and Bell go on to say:

Suppose that these securities have a market value at the end of the next five consecutive years as follows: \$150,000, \$200,000, \$250,000, \$250,000, and \$200,000. If the securities are sold at the end of the fifth year, the (conventional) accountant would record a realized gain of \$100,000. This gain would be attributed to the current period in the reports of the firm despite the fact that the gain has been earned over a five-year period. While the reported evidence is skimpy, one might be inclined to say that the management is currently more successful than it has been in the past. As a matter of fact, however, the firm was fairly successful in its holding activities during the first three of the five years, broke even in the fourth year, and actually suffered a loss during the fifth year. On the basis of this information, other things being equal, it might not be unfair to suggest that managerial efficiency is decreasing in this firm so far as its holding activities are concerned.²⁷

Public market quotations are objective and are used to value gold, crude oil, grain and many other products of primary industry. The public market quotations of stocks and shares are just as objective as evidence of value. "If market value may be ascertained with sufficient certainty and objectivity . . . there is no excuse for asserting that the excess of this market value over cost is inferior to other business gains by attaching the label 'unrealized'."²⁸

²⁶*Op. cit.*, p. 111.

²⁷*Op. cit.*, pp. 222-223.

²⁸Coughlan, J. W., *op. cit.*, p. 112.

Not only are stock-exchange values objective, but they give a much more accurate picture of profit, as the Edwards and Bell illustration given above shows. Robert T. Sprouse even goes so far as to claim that conventional accounting is “least likely to provide objective information”. He illustrates this with the following example:

Assume that three 1000 share blocks of the same class of a corporation stock have been acquired at different times and are currently held. The historical cost specifically identified with one block is \$100 per share. The historical cost specifically identified with one block is \$200 per share. And the specifically identified historical cost of the third block is \$300 per share. To obtain funds, it has been decided to sell one of the blocks of stock at the current price of \$200 per share. Obviously, since the shares are homogeneous and interchangeable, the selection of the block to be sold affects, intrinsically, neither the economic well-being of the firm nor the profitability of the firm's operations. Yet, quite arbitrarily, the selection determines whether reported net income will be increased, decreased, or held unchanged. Under these circumstances, accounting for historical costs not only fails to provide useful information, it necessarily produces information which is capriciously misleading or which can be consciously manipulated.²⁹

But what about the situation where there are no market value quotations for stocks and shares? This occurs in cases where shares are held in private companies—and there are many companies with large share holdings in private companies whose shares are not listed at a stock exchange. Therefore this matter of unquoted shares cannot be ignored.

The valuation of unlisted shares is a topic on which whole books have been written and therefore cannot be discussed in detail in this work. However, some of the main factors which must be taken into consideration when valuing unlisted shares are the history and the type of business, the type of industry in which the company is situated, its position in that industry, the capital structure of the company, the rights of the various shareholders, the profit record of the company, its future profit prospects, its dividend history, the net tangible asset backing per share as a security factor, the liquidity position of the com-

²⁹*Accounting Review*, October 1963, pp. 691–692.

pany, the ability of its management, the number of uncompleted contracts it has on hand (if any), and so on.

Of all these, the factors which are most stressed by authors on this subject are future profit prospects (past profit figures can play an important role here as a guide) and net tangible asset backing.

It is essential that both the profits of unlisted companies be calculated and their assets valued in accordance with the recommendations contained in this and previous chapters.

To value the shares of unlisted companies by using the results of conventional accounting procedures (i.e. based on historical costs) could quite easily result in the determination of share valuations which are grossly incorrect.

In order to produce accounting reports in current values it is essential that shares in *unlisted* companies be revalued from time to time. To leave these in the accounts at the original purchase price would be just as incorrect as it was with the case of the shares of companies whose shares *are* listed at the stock exchange.

Where the movements in the valuations of unlisted shares differ from the movements in the prices of those things for which the cash is eventually intended (for the investor of surplus cash), or differ from the movements in the relevant stock-exchange index (for the investor who has as his sole object or as one of his main objects the investing in stocks and shares), then these differences should be treated as profits and losses in exactly the same manner as shown previously in this section when discussing shares which are listed at the stock exchange.

However, in the case of a *holding company* with a total or almost total interest in one or more unlisted subsidiary companies, there is a different situation. Here, to the group of companies as a whole, and to the management of the group, the trading activities of the group with the outside world are the main consideration in the overall profit-making process of the group. The holding company/subsidiary company set-up is merely an organization device, and this is most obvious in the case of a holding company which merely holds shares in subsidiary

companies and does not trade itself. In these circumstances, the holding company cannot make “gains” or “losses” by holding shares in the subsidiary companies in its organization web.

Where a holding company has a total interest or a large controlling interest in one or more subsidiary companies, the efforts of each subsidiary in adding to the profits of the group in that group’s dealings with the outside world are all-important. It is essential for management decision-making and control purposes for the “real” profits of each subsidiary to be revealed and for these to be compared with its “real” current funds employed.

For reporting purposes, it is necessary for the balance sheet of the holding company to be shown as well as that for the consolidated group, and therefore it is still necessary for the shares in the subsidiary companies to be valued in current terms in the balance sheet of the holding company. To continue to record these “at cost” could be very misleading to both the directors and the shareholders of the holding company. But all of such revaluations will be of a “capital” nature in such an organizational structure.

All consolidated accounts, will, of course, be prepared in current prices from financial statements of group companies already expressed in current prices, and the holding company’s shareholdings in subsidiary companies will be eliminated in the consolidating process in the usual way.

As the valuation of shares in unlisted companies is not the essence of “objectivity” in most cases, it is realized that such revaluations will probably be tinged with conservatism in practice. However, the revaluation of shares in subsidiary companies at current values which are slightly conservative will still obviate the ridiculous understatement of the value of shares in unlisted companies (i.e. at cost) in these days of rising prices.

Speculating in Commodities

At the end of Chapter 8 it was stated that “there is a very close connection between the holding by a going concern of assets in

the form of cash, speculative shares and speculative inventories” and that the discussion on these items would be continued in the chapter on monetary assets. The matter of shares was discussed in the section above.

If any firm speculates some of its surplus cash in commodities, or if it is occupied full-time in speculating, the situation in each case is exactly the same as if it were investing in stocks and shares.

For the firm speculating in commodities with its surplus cash on a temporary basis, there is a profit or loss when prices change, to the extent that the values of the commodities move at a different rate than the movements in the prices of those things for which the cash is eventually intended. For example, if the prices of those things for which the surplus cash is eventually intended remain constant while the prices of the speculative commodities rise, the total amount of the rise is profit.

Where a firm is a full-time speculator in commodities, the situation is similar to the full-time investment company. It becomes necessary to compare the movements of the market values of the commodities held with the movements in an index of the prices of those things in which the firm is likely to speculate. The investment company had a ready-made set of stock-exchange indexes available. The speculating company should be able to locate or construct an index which reflects the price movements of those commodities in which it usually speculates. As pointed out previously, there are many indexes produced by governmental statistical bureaus and other bodies. It could be that a wholesale price index, or one of the import price indexes, or an export index or a consumer price index, or some other index might reflect the movements in these prices with accuracy. It is certain that a matching of current selling values with old original costs will not give an accurate profit figure when prices are moving either up or down. An accurate profit figure can only be obtained by adjusting the original costs of the commodities with the aid of an index reflecting the price movements of those commodities in which the firm usually speculates.

170 *Accounting for Price-level Changes—Theory and Procedures*

Assuming that prices are rising and that the current selling prices of speculative commodities held have risen at a greater rate than the index of the commodities handled by the firm, then the entry to record the profit would be as follows:

Stocks of speculative commodities	Dr. (with the total increase in selling prices)
Capital reserves	Cr. (with the amount of the rise in the representative index)
Profit on speculative commodities	Cr. (with the difference).

It will be noticed that, as with stocks and shares, the profit is realized when the prices rise and is not delayed until the speculative stocks are eventually sold.

Conclusion

The calculations of profits and losses on monetary items, investments and speculative commodities are all necessary if the “real” profit of the firm is to be arrived at. Their appearance in the profit and loss account will also be most helpful to management in its planning, control and decision-making functions. The revealing of such losses will motivate action to prevent or minimize further such losses, and the revealing of any such profits will provoke action to increase these in the future.

CHAPTER 12

PROFIT: AT AVERAGE FOR PERIOD PRICES OR AT END OF PERIOD PRICES?

THE adjustments and procedures recommended in the previous chapters will result in the production of balance sheets in *end* of period current prices and in the production of profit and loss accounts in *average* for the period current prices.

The matching of revenues in average prices with costs also expressed in average prices results in a consistent, logical profit figure. It is far more logical than when revenues in average prices are matched with a mixture of old historic costs and costs which are in average prices of the current period; and it is also more logical than when revenues in average prices are matched with a mixture of costs which are in average prices of the current period and costs which are in end of period prices. The production of the profit figure in average for the period prices is made possible by (a) the practical simplicity of the majority of the adjustments advocated, in this book, to reflect changing prices when profit statements are produced on a monthly basis, and by (b) the fact that revenues are automatically recorded in average prices.

However, should the profit statement in average for the period current prices be converted to the same end of period current prices in which the balance sheet is stated automatically? On the surface this would seem to be a necessary process if perfection is to be the aim.

Mr. W. E. Nichols in discussing this point has said:

While it is true that for financial accounting purposes the income statement is prepared at the end of the accounting period, the important

172 Accounting for Price-level Changes—Theory and Procedures

point is that it relates to a *period* of time and provides a measurement of income derived *during* that period of time. On these grounds it can be argued . . . that the aim should be to measure current income in terms of prices prevailing *during* the accounting period and this implies measurement in terms of average prices rather than end-of-period prices.¹

This in itself does not seem convincing because it can be argued that although the profit statement provides a measurement of profit derived *during* the period, there is no reason why it cannot be shown in the end of period prices applying when it is eventually produced at the end of the period.

In the same paper Mr. Nichols introduces a more complex point when he states that the production of the profit statement in end of year prices

would introduce a concept of income the validity of which would be open to serious question because revenue derived from sales made during the year would not have been realized in terms of end-of-year prices but in terms of prices prevailing at the time the sales were made.²

In other words, he questions the validity of writing up or down the recorded sales of the year so as to show them in end of year prices.

If the revenues derived from the sales made during the period were held in the form of cash (and not reinvested in stocks or spent on wages or other operating expenses), and if no calculations were made of the profits or losses created by holding monetary assets in times of changing prices (remember, too, that the other side of these entries goes to capital reserves), then Mr. Nichols might have a point here.

As most of the revenues derived from sales during the period would have been reinvested in trading stocks or other assets which automatically appreciate or depreciate in value as prices change, or would be used to pay operating expenses in prices current at the time, and as profits and losses on the holding of monetary items are calculated in a fully integrated system, it

¹*Australian Accountant*, September 1961, p. 507.

²*Ibid.*, p. 510.

seems that the concept of profit revealed by the profit statement in end of period prices is a valid one.

Messrs. Edwards and Bell in their book have this to say on the preparation of the profit statement in end of period prices:

We have no objection to the construction of profit statements in end-of-period dollars. Indeed, there is much to be said for presentation in dollars that accord generally with the balance sheet. We do feel strongly, however, that the accounts in which the adjusted data are gathered should be consistent with the profit statement prepared in average-of-period dollars to avoid destruction of historic cost data or the unnecessary duplication of all revenue and expense accounts.³

To avoid the application of the ideal method merely because of some practical difficulties does not constitute a good theoretical argument, but there are times when the ideal theory cannot be applied because of the physical trouble involved. In these cases the next best should be used if it can be applied in an economical fashion. It could be that this applies in this matter of whether to show the profit statement in end of period or average for period prices.

Just what is involved if end of period prices are to be used in the profit statement?

Every item in the profit statement, including sales, costs of sales, administrative expenses, selling and distribution expenses, financial expenses, depreciation, profits and losses on monetary items, etc., must be converted from average prices to end of period prices. To do this accurately introduces complex and elaborate systems of accounting and/or adjustment. It is obvious that no one single index would be suitable for the adjusting of all these different revenue and expense items to end of period prices.

For those who advocate the use of just one general index, the task is not such a difficult one even if all items are adjusted. They need only adjust the profit figure if there is no real interest in the individual revenue and expense items. This could not be

³*Op. cit.*, p. 253.

done when specific indexes, advocated in this book, are used. As explained previously, if the real (end of period) prices as they apply to the firm itself are to be obtained, then it is essential that each item be treated in accordance with the specific movements in its prices as they apply to the firm. This could be time-consuming.

If the profit statement is left in average for the period prices and not converted to end of the period prices, what harm is done?

When prices are rising, profits will tend to be understated and capital reserves will tend to be overstated. As creeping inflation seems to be the common result of economic policies being applied in “free enterprise” countries, this tendency to understate profits will please the conservative accountant; but if the understatement of profit is significant, then something should be done to convert the profit statement to end of the period prices.

If all prices were to rise by say 4% during a year (and this is above the average in recent years for most of the countries listed in the table in Chapter 2), then profits would be understated by an average of 2% and capital reserves would be overstated if profit statements were produced in average for the year prices. This means that an *average* current profit for the year of \$100 would be \$102 in end of year prices, and that of \$100,000 would be \$102,000. To the author these differences do not appear to be significantly important, and they do not seem to warrant all the trouble that would be necessary to adjust each revenue and expense item. It must be remembered that in practice, *every* item would not have risen by 4%. The price of each item would have fluctuated by a different percentage.

However, to others this difference of 2% might seem significant and might warrant making the adjustments in order to show the profit statement (and the profit figure) in end of year prices. If all prices were to *fall* by 4% during the year, then the average current profit for the year of \$100 would be \$98 in end of year prices, and that of \$100,000 would be \$98,000. To many, decreases might become significantly important while increases of a similar size would not.

When price levels fluctuate at a relatively slow rate (i.e. as they have done in Australia, Belgium, Canada, Western Germany, Italy, Japan, Pakistan, the Philippines, the Union of South Africa, the United Kingdom, and the United States of America, etc., in recent years), then it could be that a profit statement in average for the period prices is quite satisfactory for all purposes, and that there is no necessity to undertake the task of adjusting to end of period prices month by month—or even at the end of the year.

In the following example, designed to demonstrate the importance (if any) of adjusting the profit statement to end of period prices when prices have not fluctuated very much during the year, the profit statements of a concern are prepared in

- (a) conventional historical costs,
- (b) average for the period current prices, and
- (c) end of the period current prices.

It is assumed that buying prices for the trading stocks have moved as follows:

			\$
Jan.	1	100	each
Feb.	1	101	each
May	1	102	each
August	1	103	each
Nov.	1	104	each

and that the 300 units on hand at 1 January cost \$98 each. Purchases were made twice during the year, i.e. 600 units on 1 January for \$100 each, and another 600 units on 1 July for \$102 each. Sales were at the rate of 100 units per month. Most of the fixed assets were purchased several years ago when prices were much lower.

176 *Accounting for Price-level Changes—Theory and Procedures*

PROFIT STATEMENT FOR THE YEAR ENDED 31 DECEMBER

Item	Conventional historical costs \$	Average for the period prices \$	End of the period prices \$	Relevant price rise during year
Sales	200,000	200,000	203,800 ⁴	3·8%
Cost of sales ⁵	120,000	122,600	124,800	4·0%
<i>Gross profit</i>	80,000	77,400	79,000	
Admin. expenses	10,000	10,000	10,200	4·0%
Selling expenses	8,000	8,000	8,120	3·0%
Depreciation	24,000	30,000	30,750	5·0%
Losses on monetary assets held	—	2,000	2,040	4·0%
<i>Net profit</i>	\$38,000	\$27,400	\$27,890	

⁴\$203,800 = \$200,000 increased by half of 3·8%. The \$200,000 is already in average prices for the year. The 3·8% is an average of the rises in prices of those things on which the proceeds of these revenues would have been spent during the period.

⁵The cost of sales figures are made up as follows:

Month	Historical costs (FIFO) \$	Average for the period prices \$	End of the period prices
January	9,800	10,000	} 1200 units × \$104 each
February	9,800	10,100	
March	9,800	10,100	
April	10,000	10,100	
May	10,000	10,200	
June	10,000	10,200	
July	10,000	10,200	
August	10,000	10,300	
September	10,000	10,300	
October	10,200	10,300	
November	10,200	10,400	
December	10,200	10,400	
	\$120,000	\$122,600	\$124,800

It will be noticed that if 2% (half of 4%) is added to the total of the average for the period cost of sales figure, an amount of \$125,052 is obtained. However, this is an approximation only, based on the assumption that prices rose evenly throughout the period, which is not quite correct. The \$124,800 figure for the total costs of goods sold in end of the period prices is the accurate one in this case. In practice, though, a calculation by units would not be possible in most cases.

In the above profit statements, the difference between the net profits produced in average for the period prices and in end of the period prices is insignificant—especially when compared with the differences between them and the overstated net profit produced by conventional methods. The large increase in the end of the period sales figure is offset by a large increase in cost of sales, and by small increases in the various expense items.

Unless prices fluctuate greatly in an accounting period, it is recommended that the profit statements be prepared direct from the accounting records in average for the period prices. This will also obviate the barrier of convincing people that the sales total for the year as per invoices has to be written up or down. It is also recommended that where profit statements are produced in average for the period prices, a note to this effect be included in the heading of such a statement.

However, when prices do rise or fall at a fast rate during an accounting period, then it could be that the profit statement should be prepared in end of period prices. In each case it would be necessary to experiment to see if the profit produced by the profit statement in average for the year prices is significantly inaccurate.

Prices have been rising at a very fast rate in recent years in some South American countries (e.g. Argentina and Brazil) and Mr. Max I. Epps, a fellow of the Institute of Chartered Accountants in England and Wales who practises as a management consultant in Sao Paulo, Brazil, has written a paper showing the way he produces end of the period accounting statements progressively each month.⁶ His method is made fairly simple by the use of one general index. Although his results must be much more accurate than those produced using conventional historical costs, it is obvious that prices of different commodities and fixed assets in Brazil are increasing at different rates, and that the use of specific indexes is essential if the profit-making ability and the financial position of each firm are to be known.

⁶*Journal of Accountancy*, January 1961.

178 Accounting for Price-level Changes—Theory and Procedures

If prices are rising and falling quickly, then any adjusting to end of period prices should be carried out on a monthly basis (at least) progressively throughout the accounting year. If this is not done, management would be denied vital data on which to base many decisions *during* such a trying and difficult period.

In such cases it is recommended that the accounts be kept in average for the period prices as recommended in the previous chapters and that further adjustments to profit statement items be made on a monthly basis in the way demonstrated in the following example.

PROFIT STATEMENT FOR APRIL				
Progressive Balance for Year to 31 March				
Item 1.	In March prices 2.	Restated in April prices 3.	April figures 4.	Progressive balance for year to 30 April 5.
	\$	\$	\$	\$
Sales	90,000	95,000	35,000	130,000
Cost of sales	55,000	58,000	21,000	79,000
<hr/>				
<i>Gross profit</i>	35,000	37,000	14,000	51,000
Admin. expns.	5,000	5,300	1,700	7,000
Selling expns.	4,000	4,200	1,500	5,700
Depreciation	12,000	12,700	4,200	16,900
Losses on monetary assets held	1,000	1,055	445	1,500
<hr/>				
<i>Net profit</i>	\$13,000	\$13,745	\$6,155	\$19,900
<hr/>				

The calculations to convert column 2 figures to the April prices in column 3 would be made with indexes specific to each item.

The specific index used to convert sales from \$90,000 to \$95,000 would have to be based on the specific price indexes of those things on which the proceeds of the sales are normally spent, e.g. stocks, administrative expenses, etc. (To the extent that they are not spent will be taken care of by the calculation of losses on monetary assets held.) Sales should not be adjusted by using a

specific index of selling prices. If it became possible to double selling prices in any month, this does not mean that the total sales figure for previous months can be doubled! Further, if no increase in selling prices can be obtained at all, there is no objection to the sales totals of previous months being increased by the specific index based on those things on which the proceeds of the sales have *been* spent. The costs of these previous sales cannot be increased alone. The sales figure must be increased, too.

After making the calculations in the example above, it would be necessary to write up the 31 March balances of these items in the accounting records, and in this case the entry to do this would be:

	\$	\$
Cost of sales	Dr. 3000	
Administrative expenses	Dr. 300	
Selling expenses	Dr. 200	
Depreciation	Dr. 700	
Losses on monetary assets held	Dr. 55	
Capital reserves	Dr. 745	
sales		Cr. 5000

(Being conversion of March balances to April prices.)

This entry automatically increases net profits by the amount of \$745 at the expense of capital reserves previously created in the process of accounting for price-level changes. The fact of the matter is that profits in end of period prices are greater in this example than they were in average for the year prices.

It must be remembered that progressive entries would be made during each month (as prices rise), thus increasing the book values of fixed assets and inventories in the ways advocated in previous chapters, and that the balance of the capital reserve account (or accounts) would also be increasing accordingly.

It is hoped that prices do not increase at such a rate as to make these additional monthly adjustments necessary, and that the profit statement can be left in average for the period prices. But it is essential that accountants record facts to the best of

their ability, and it is essential that they do not produce figures which are totally inaccurate merely to avoid certain difficulties.

With return on capital calculations (no matter what one's concept of "capital" is for this purpose), it is always necessary to use an *average* capital figure for the period in question and not just the figure at beginning or end. This is most important when profit is produced in *average for the period* prices. To relate such a profit to a capital figure in end of period prices is obviously wrong. Such a profit figure should be related to an average capital figure in average for the period prices. For example, profit for a year in average for the year prices could be related to the average of the capital figures for each month of the year, i.e. in prices current in those months.

Similarly, profit for the year in *end of period* prices must be related to an average capital figure also in end of period prices. In order to obtain such a capital figure it would be necessary to restate in end of year prices all capital figures used in obtaining such an average.

CHAPTER 13

AN ILLUSTRATIVE EXAMPLE— INCLUDING CHANGE-OVER PROCEDURES AND FUNDS STATEMENTS

AT THIS stage it is considered desirable to produce an example which incorporates in a simple fashion all of the adjustments recommended and which is a fair representation of current average conditions. As chapters to date have included in detail the procedures to be adopted in order to account for costs of goods sold, inventories, depreciation, fixed assets, and profits and losses on monetary items, when prices are changing, it is not intended that this example should go back over the various journal and ledger account entries or the entries in the various subsidiary records such as stock cards, plant registers, and so on.

The idea here will be to examine change-over procedures, to look at the results of the XYZ Company for a year expressed both in conventional historical costs and in current costs, and to examine the position of the firm at the end of the year. Monthly reports will be dispensed with, too.

The example does not include any exaggerations and no attempt has been made to inject any bias into the figures used.

182 Accounting for Price-level Changes—Theory and Procedures

Results in Conventional Historical Costs

CONVENTIONAL BALANCE SHEET AT 1 JANUARY 19...

	\$		\$	\$
Paid-up capital	120,000	Land (at cost)		40,000
Undistributed profits	20,000	Buildings (cost)	200,000	
Debentures (5%)	70,000	—Depreciation		
Accounts payable	20,000	(@ 2½% p.a.)	100,000	
Taxation provision	10,000		<hr/>	100,000
Dividend provision	10,000	Fittings (cost)	20,000	
		—Depreciation		
		(@ 10% p.a.)	10,000	
			<hr/>	10,000
		Inventories		
		(500 @ \$98)		49,000
		Accounts receivable		25,000
		Cash at bank		26,000
	<hr/>			<hr/>
	\$250,000			\$250,000

Trading stock prices have risen as follows during the year:

	\$
Dec. 31	100 each
Feb. 1	101 each
May 1	102 each
August 1	103 each
Nov. 1	104 each

and purchases during the year were as follows:

Date	Quantity	@ Price \$	Value \$
Jan. 1	150	100	15,000
Feb. 1	150	101	15,150
Mar. 1	150	101	15,150
April 1	150	101	15,150
May 1	150	102	15,300
June 1	150	102	15,300
July 1	200	102	20,400
Aug. 1	200	103	20,600
Sept. 1	200	103	20,600
Oct. 1	200	103	20,600
Nov. 1	200	104	20,800
Dec. 1	200	104	20,800
		<i>Total</i>	<hr/> <hr/> \$214,850

An Illustrative Example—Including Change-over Procedures 183

CONVENTIONAL PROFIT AND LOSS ACCOUNT FOR YEAR ENDED 31 DECEMBER 19...

	\$	\$
Sales (2000 units)		270,000
Cost of sales: (FIFO)		
500 @ \$ 98	49,000	
150 @ \$100	15,000	
450 @ \$101	45,450	
500 @ \$102	51,000	
400 @ \$103	41,200	
	201,650	
<i>Gross profit</i>		68,350
Administrative expenses	10,000	
Selling expenses	8,000	
Depreciation—buildings	5,000	
Depreciation—fittings	2,000	
Taxation provision (say)	17,000	
Interest on debentures	3,500	
	45,500	
<i>Net profit</i>		\$22,850

On this result, the directors decided to declare a dividend for shareholders of 10%, thus taking \$12,000 and leaving \$10,850 to be added to undistributed profits to assist in financing future expansion. This then gave the position at the end of the period as:

CONVENTIONAL BALANCE SHEET AT 31 DECEMBER 19...

	\$		\$	\$
Paid-up capital	120,000	Land (at cost)		40,000
Undistributed profits	30,850	Buildings (cost)	200,000	
Debentures (5%)	70,000	—Depreciation		
Accounts payable ¹	26,000	(@ 2½% p.a.)	105,000	
Taxation provision	17,000		95,000	
Dividend provision	12,000	Fittings (cost)	20,000	
		—Depreciation		
		(@ 10% p.a.)	12,000	
			8,000	
		Inventories		
		(200 @ \$103)	20,600	
		(400 @ \$104)	41,600	
			62,200	
		Accounts receivable ²		35,000
		Cash at bank ³		35,650
	\$275,850			\$275,850

¹, ², ³See footnotes on next page.

The above appears to reveal a good result for a company in a fairly sound position.

Change-over Procedures

Before proceeding to produce the statements for the year's results in current costs it is necessary to convert the opening balance sheet to costs current at 1 January 19.... This is a task which faces all firms when they decide to institute a fully integrated accounting system designed to incorporate the effects of changing price levels in the way recommended in previous chapters. It is also a task which faces firms which adopt the recommendations put forward by others in connection with accounting for price-level changes, but, of course, their ideas on "change-over procedures" may differ from these.

¹This accounts payable balance is made up:

Opening balance	20,000		
Purchases	214,850		
		234,850	
<i>Less</i> Payments		208,850	
			= \$26,000

See Appendix to this chapter for month-by-month balances.

²This accounts receivable balance is made up:

Opening balance	25,000		
Sales	270,000		
		295,000	
<i>Less</i> Collections		260,000	
			= \$35,000

See Appendix to this chapter for month-by-month balances.

³This cash at bank balance is made up:

Opening balance	26,000		
Collections	260,000		
			286,000
<i>Less</i> Payments—			
Taxation	10,000		
Dividends	10,000		
A/cs Payable	208,850		
Administrative exs.	10,000		
Selling exs.	8,000		
Interest—debentures	3,500		
			250,350
			= \$35,650

All non-monetary assets have to be revalued if they were purchased at out-of-date prices, and this is all that has to be done. With some firms this will be a very difficult task, but with others it may not. Many firms have faced up to this task and have revalued their non-monetary assets in recent years and so could have been in a position to proceed with the recommendations set out in this work.

If the identical assets are still available “in the shop windows”, the task of revaluing is an easy one. To the extent that assets are not still available in the market place, then some estimating must take place. It is recommended that such estimating be carried out with the aid of specific indexes if suitable ones are available to reflect accurately the movements in costs of each asset.

If suitable indexes are not available and cannot be constructed, or if technological improvements cloud the picture to a large extent, then it may be necessary to seek the services of an expert valuer in connection with some of the assets. It is important that any valuations made by such an expert be made on a “going concern” basis and not on a “liquidation” basis, if the firm has no intention of going out of business.

When assets are revalued in the change over, i.e. by using current market prices, indexes, or expert revaluations, full details must be recorded on stock ledger cards, and in plant registers, etc., and not only in the general ledger of the firm.

The other side of the entry goes to a capital reserve account in each case (or a capital adjustment account, if this title is preferable) and is not treated as a profit or a loss.

If by some error of judgement some assets are written up to figures in excess of their true current values, then this results in *reduced* future profits and in *reduced* future rates of return on capital! Profits would be reduced because future depreciation costs and costs of goods sold would be in excess of their true current values. Future rates of return on capital would be reduced because of the reduced profit figures and because the capital figure in the denominator in the percentage calculation would be overstated by the excess capital reserves.

Great care must be taken with the change-over revaluations. Over valuations and under valuations must be avoided if future accounting reports are going to reflect the true current information desired.

Results in Average Current Costs

It is assumed that satisfactory revaluations were managed by the XYZ Company and that its revalued balance sheet as at 1 January 19... was:

BALANCE SHEET AS AT 1 JANUARY 19... IN CURRENT COSTS

	\$		\$	\$
Paid-up capital	120,000	Land (revalued)		80,000
Undistributed profits	20,000	Buildings		
Capital reserves	143,500	(revalued)	400,000	
Debentures (5%)	70,000	—Depreciation		
Accounts payable	20,000	(@ 2½% p.a.)	200,000	
Taxation provision	10,000		<hr/>	200,000
Dividend provision	10,000	Fittings		
		(revalued)	25,000	
		—Depreciation		
		(@ 10% p.a.)	12,500	
			<hr/>	12,500
		Inventories (revalued)		
		(500 @ \$100)		50,000
		Accounts receivable		25,000
		Cash at bank		26,000
	<hr/>			<hr/>
	\$393,500			\$393,500

When the above balance sheet is compared with the opening one prepared on conventional lines on p. 182 (i.e. at 1 January 19...), it will be noticed that all monetary items have not been altered, and that it is only the non-monetary assets that have been revalued. It is thought that the revaluations made in this example are not exaggerated in any way. It is quite reasonable to assume that the current costs of land and buildings have doubled in 20 years, and that the current costs of fittings have increased by 25% in the last 5 years. The unit cost of the trading stock items has been increased by only a small amount.

An Illustrative Example—Including Change-over Procedures 187

It has been assumed that the current costs of land and buildings have increased by a further 5% during the year 19..., and that the current costs of fittings have increased by a further 4%.

The profit figure in average current costs for the year is revealed in this statement:

PROFIT AND LOSS ACCOUNT FOR YEAR ENDED 31 DECEMBER 19... IN AVERAGE CURRENT COSTS

	\$	\$
Sales (2000 units)		270,000
Cost of sales:		
January 166 @ 100	16,600	
Feb.–April 500 @ 101	50,500	
May–July 500 @ 102	51,000	
Aug.–Oct. 500 @ 103	51,500	
Nov.–Dec. 334 @ 104	34,736	
	204,336	
<i>Gross profit</i>		65,664
Administrative expenses	10,000	
Selling expenses	8,000	
Depreciation—buildings ⁴	10,250	
Depreciation—fittings ⁵	2,550	
Loss on monetary items held ⁶	1,528	
Taxation provision ⁷	17,000	
Interest on debentures	3,500	
	52,828	
<i>Net profit</i>		\$12,836

⁴This depreciation charge would be made at monthly intervals as advocated, but it would approximate:

$$2\frac{1}{2}\% \text{ on } \frac{400,000 + 420,000}{2} = \$10,250.$$

⁵Similarly, this depreciation charge would approximate:

$$10\% \text{ on } \frac{25,000 + 26,000}{2} = \$2550.$$

⁶See the detailed Accounts Payable, Accounts Receivable and Cash at Bank Accounts in the Appendix to this chapter and the calculations of this figure of \$1528.

⁷There is no alteration in this taxation figure. It is based on the provisions of the taxation legislation.

When a comparison is made between the profit and loss accounts prepared in the conventional manner in historical costs and in the recommended manner in average current costs, it is found that “real” net profit for the period is only \$12,836, and not \$22,850. (See pp. 183 and 187).

The difference of \$10,014 is made up as follows:

	\$
Cost of sales	2,686
Depreciation—buildings	5,250
Depreciation—fittings	550
Loss on monetary items held	1,528
	<hr/> \$10,014 <hr/>

It can be seen that in the case of the XYZ Company the understatement of depreciation played a big part in the overstating of profit by conventional methods. With other companies it would be found that costs of sales is the main contributing factor, and with some other companies it may be found that the ignoring of losses incurred through holding monetary assets while prices rise results in much overstating of profit when historical costs are used in the profit-determining process.

In this case of the XYZ Company, the situation is a serious one but it is typical. It will be discussed further after the balance sheet in end-of-year current costs has been given. At this stage it can be seen how fortunate the directors were when they decided on a dividend of 10% and not one of 12½%. The 10% dividend of \$12,000 is just covered by “real” profits and leaves almost nothing towards the internal financing of future expansion.

An Illustrative Example—Including Change-over Procedures 189

BALANCE SHEET AS AT 31 DECEMBER 19... IN END-OF-YEAR
CURRENT VALUES

	\$		\$	\$
Paid-up capital	120,000	Land (revalued)		84,000
Undistributed profits	20,836	Buildings		
Capital reserves ⁸	161,114	(revalued)	420,000	
Debentures (5%)	70,000	—Depreciation		
Accounts payable	26,000	(@ 2½% p.a.)	220,500	
Taxation provision	17,000			199,500 ⁹
Dividend provision	12,000	Fittings		
		(revalued)	26,000	
		—Depreciation		
		(@ 10% p.a.)	15,600	
				10,400 ¹⁰
		Inventories		
		(600 @ \$104)		62,400
		Accounts receivable		35,000
		Cash at bank		35,650
	\$426,950			\$426,950

When the above balance sheet as at December 31st in end of year current values is compared with the balance sheet prepared in historical costs (see p. 183), the differences are considerable. The balance sheet in end-of-year current costs gives the “real” situation and enables both management and shareholders to get an accurate perspective of the “real” funds tied up in the business.

The following comparisons between data prepared from both the conventional, historic cost statements and the statements prepared in current costs show just how the directors of the XYZ Company were completely misled about the profitability and the financial situation of the company.

⁸Details of the composition of this figure are given in the Appendix to this chapter.

⁹47½% of \$420,000 = \$199,500. The buildings have now served 21 years of their estimated life of 40 years.

¹⁰40% of \$26,000 = \$10,400. The fittings have now served 6 years of their estimated life of 10 years.

190 Accounting for Price-level Changes—Theory and Procedures

Item	In historic costs	In current costs
The return % of net profit and interest on total permanent funds employed, i.e. including debentures.	$\frac{\$26,350}{\$220,850} \times \frac{100}{1}$ $= 11.93\%$	$\frac{\$16,336}{\$371,950} \times \frac{100}{1}$ $= 4.39\%$
The return % of net profit to total shareholders funds.	$\frac{\$22,850}{\$150,850} \times \frac{100}{1}$ $= 15.15\%$	$\frac{\$12,836}{\$301,950} \times \frac{100}{1}$ $= 4.25\%$

Note: Funds as at 31 December 19... have been used in these calculations so that they can be followed easily. The more accurate use of average funds for the year would reveal similar differences in percentages.

Whilst the directors were under the impression that their company was returning 11.93% on total permanent funds and 15.15% on total shareholders' funds, the true percentages were only 4.39% and 4.25% respectively. The true returns are less than the rate of interest being paid to debenture holders. As has been pointed out previously, this is not an exaggerated case. The XYZ Company could be similar to many companies operating today in Australia, the United Kingdom or the United States of America.

Mr. A. R. Mutton was quite correct when he said this of conventional unadjusted figures:

It is mathematical nonsense to use the profits to funds ratio as a test of the worthwhileness of the business or the efficiency of its management. With the profit overstated and with the funds understated, the percentage reflects two errors both operating to overstate the percentage.¹¹

Protection of Capital

Profit for a firm during any period of time is the maximum amount expressed in dollars which, if there were no additional

¹¹*Australian Accountant*, August 1962, p. 412.

An Illustrative Example—Including Change-over Procedures 191

investments during the period, could be distributed by the firm to its beneficiaries without impairing its real capital.

In the XYZ Company example, \$12,836 was the maximum amount that could be distributed and still leave real capital intact. If the total of the profit figure revealed by the conventional, historic cost methods, i.e. \$22,850, had been distributed, the real capital of the company would have been impaired.

The balance sheet of the XYZ Company, in *current costs*, as at 1 January 19..., reveals a total permanent capital figure of \$353,500 made up as follows:

	\$
Paid-up capital	120,000
Undistributed profits	20,000
Capital reserves	143,500
Debentures	70,000
	<hr/>
	\$353,500
	<hr/>

Have the accounting procedures recommended in this work resulted in the protection of real capital at 31 December 19..., i.e. after the year's operations?

It is known that most prices which affected the company rose by 5% during the year, and that some rose by 4% only. However, for the purposes of a rough check calculation, the 5% figure will be used. The permanent capital of the company had to be increased by slightly less than 5% of the opening balance of \$353,500 (see above) for this to have happened. Unless this has occurred, then the company's profit figure of \$12,836 is open to question.

Five per cent of \$353,500 is \$17,675, and it will be noticed that the capital reserve account balance increased by \$17,614, i.e. from \$143,500 to \$161,114, through the accounting procedures carried out during the year. Everything is in order.

This increase of \$17,614 in the capital reserve account is made up as follows:

192 *Accounting for Price-level Changes—Theory and Procedures*

	\$	\$
Revaluation of land		4,000
Revaluation of buildings	20,000	
—revaluation of depreciation provision	10,000	
—retrospective depreciation adjustments during the year (\$10,500 — \$10,250)	250	
	—	9,750
Revaluation of fittings	1,000	
—revaluation of depreciation provision	500	
—retrospective depreciation adjustments during the year (\$2600 — \$2550)	50	
	—	450
Revaluation of inventories ¹²		1,886
Creation of loss on monetary items held ¹³		1,528
		—
		\$17,614

These revaluations were reflected in the Profit and Loss Account in the items for depreciation and cost of sales, as well as in the item loss on monetary items held. If the revaluations had not taken place in this way profits would have been overstated as demonstrated in this chapter.

General Index Concept of Profit

If, despite what has been said throughout this book, people still have a general index concept of profit (i.e. they still have a proprietorship outlook), then it is believed that they will still be forced for practical reasons and difficulties to account in the ways outlined in the previous chapters. It will not be possible for them to separate movements in the general index and the various specific indexes and prices when revaluing individual fixed asset and inventory items in day-to-day accounting procedures.

However, they will be able to recognize their “holding gains and losses” and arrive at their general index concept of profit in a simple way every month, quarter or year—for preference every month.

¹²See inventories account in Appendix to this chapter.

¹³See calculation of this amount in Appendix to this chapter.

In the above example let us suppose that the general index for the year had increased by 5%. The amount by which the additions to capital reserves during the year (\$17,614, see previous page) differed from the general index movement for the year (5%) applied to capital at the beginning of the year would have to be brought to account. Five per cent of the capital at the beginning of the year, \$353,500, is \$17,675 and this is \$61 in excess of the year's increases to capital reserves.

The entry to recognize these "holding losses" of \$61 and to adjust the Capital Reserve A/c would be:

Profit and Loss A/c	Dr.	\$61	
Capital Reserve A/c			Cr. \$61

On the other hand, if the general index had risen by only 4% during the year, then there would have been "holding gains" to the person with a general index concept of profit. The entry then would be:

Capital Reserve A/c	Dr.	\$3474	
Profit and Loss A/c			Cr. \$3474

(Being the recognition of holding gains for the period, and adjusting of capital reserves overcreated by using only specific indexes during the period, i.e. by \$17,614 (4% of \$353,500).)

However, your author believes that any additional transfers to reserves designed to "protect shareholders' funds", such as the \$61 entry above, must be treated as an allocation of profit from the Profit and Loss Appropriation Account. He believes that any such further transfers have nothing to do with the *determining* of profit itself.

Some have suggested that all that has to be done is to wait until the end of a period and then make one calculation in order to increase the Capital Reserve Account. On the surface this might appear to be a simple method worth support. But to what accounts would the debit side of the entry go? Only some of the inventories are still in stock—the balance has been sold. Some of the economic service units to be given up over the lifetime of the buildings and the fittings have been given up during the year, too.

How much should be charged to the loss (if any) on holding monetary items?

In other words, it would be impossible to make this adjustment with one calculation at the end of the year because the portion to be capitalized and the portion to be expensed would not be known. These amounts can only be calculated when adjustments are made in the ways recommended in the previous chapters. This becomes more obvious when it is realized that firms use many different types of fixed assets, and trade in many different kinds of stocks; and that different price fluctuations would apply to each of these.

In any case, the main purpose of having accounting records is to assist management with its planning, decision-making and controlling functions. Daily, weekly and monthly data are necessary for these purposes, and they must be in current prices. Any attempt to make one calculation per year, i.e. at the end of the year, would eliminate the major benefits that accounting data can give management when prices are fluctuating.

Funds Statements

Funds statements can be prepared in a number of ways depending on one's concepts of funds. Hector R. Anton says that "in funds-statement usage, the meaning of funds has varied from cash to total resources, with many gradations in between",¹⁴ and he proceeds to discuss and demonstrate funds statements prepared where "funds" are cash, total resources, working capital, current assets, money assets, and net money assets. There are probably several variations of these in practice, too.

In the American Institute of Certified Public Accountants' Research Study No. 2, "*Cash Flow*" *Analysis and the Funds Statement*, Perry Mason puts up a very convincing argument for the use of the total resources concept of funds for reporting the

¹⁴*Accounting for the Flow of Funds* (Houghton Mifflin Company, Boston, 1962), p. 31.

flow of funds to shareholders,¹⁵ but it would seem that whether one favours a total resources concept of funds on the one hand, or a cash concept or a working capital concept, etc., on the other hand, depends entirely on whether one is looking at the firm from without or within. The total resources concept certainly seems the concept of funds to use when reporting to shareholders who are “without”, as it gives them an overall view without concentrating on any one particular aspect, but it is thought that management will adopt, automatically and subconsciously, one of the other narrower types of fund concepts, i.e. cash or working capital, etc., depending on the type of business, and how it is conducted and financed.

However, an important point often not noticed or stressed is that the total resources concept of funds, basically, comes very close to a cash concept as the movements in funds so reported “are restricted to changes in financial obligations and assets which result from external transactions of the enterprise”.¹⁶ “Cash costs” are deducted from revenues, or “non-cash charges” are “added back” to net profit.

How then does the matter of changing prices affect the preparation of the total resources funds statement? The normal procedure is to commence by comparing the current balance sheet with one of a previous date, and by listing all the differences. Before this is done, should the previous balance sheet be restated in prices applying when the current balance sheet was prepared or should it be left in prices current at the time of its preparation?

As the usual idea behind funds statements of all concepts is to show up the movements of cash and/or credit funds as they actually occurred during the period, the previous balance sheet must be left in prices current at the time of its preparation. However, when the effects of changing prices are incorporated in the accounting system, there will be additional “non-cash

¹⁵New York, 1961, pp. 98.

¹⁶Mathews, R., *Accounting for Economists* (F. W. Chesire, Melbourne, 1962), p. 99.

196 *Accounting for Price-level Changes—Theory and Procedures*

charges” to be “added back” in the nature of the amounts by which depreciation and costs of sales have been restated in current values, and in the nature of “losses through holding monetary items”. Revaluations of fixed assets will have to be “eliminated” on the worksheets, too.

A comparison will now be made between funds statements prepared for the XYZ Company for the year ended 31 December 19...

- (a) based on conventional historic costs, and
- (b) based on current costs.

The worksheets for both of these are included in the Appendix to this chapter.

TOTAL RESOURCES FUNDS STATEMENT PREPARED
FROM STATEMENTS IN HISTORIC COSTS

	\$
<i>Source:</i> Profits before taxation	39,850
Funds retained by non-cash charges: depreciation	7,000
Increased accounts payable	6,000
	\$52,850
 <i>Application:</i> Increasing inventories	 13,200
Increasing accounts receivable	10,000
Increasing balance at bank	9,650
Dividends paid	10,000
Taxation paid	10,000
	\$52,850

An Illustrative Example—Including Change-over Procedures 197

TOTAL RESOURCES FUNDS STATEMENT PREPARED
FROM STATEMENTS IN CURRENT COSTS

	\$
<i>Source:</i> Profits before taxation	29,836
Funds retained by non-cash charges:	
depreciation	12,800
losses on monetary items held	1,528
additional costs of sales	2,686
Increased accounts payable	6,000
	<hr/>
	\$52,850
	<hr/>
 <i>Application:</i> Increasing inventories	 13,200
Increasing accounts receivable	10,000
Increasing balance at bank	9,650
Dividends paid	10,000
Taxation paid	10,000
	<hr/>
	\$52,850
	<hr/>

A comparison of these two funds statements shows that the actual total flow with external people has been the same, but the composition of the "sources" is different. The worksheet for the funds statement prepared from balance sheets in current costs is slightly more involved through the necessary "eliminations" of the revaluations of assets. (See pp. 202 and 203.)

APPENDIX

ACCOUNTS PAYABLE ACCOUNT

Date	Dr. Payments \$	Cr. Purchases \$	Balance \$
Jan. 1			B/F 20,000
Jan. 31	14,500	15,000	20,500
Feb. 28	14,650	15,150	21,000
Mar. 31	14,650	15,150	21,500
Apr. 30	14,650	15,150	22,000
May 31	14,800	15,300	22,500
June 30	14,800	15,300	23,000
July 31	19,900	20,400	23,500
Aug. 31	20,100	20,600	24,000
Sept. 30	20,100	20,600	24,500
Oct. 31	20,100	20,600	25,000
Nov. 30	20,300	20,800	25,500
Dec. 31	20,300	20,800	\$26,000
	\$208,850	\$214,850	

ACCOUNTS RECEIVABLE ACCOUNT

Date	Dr. Sales \$	Cr. Collections \$	Balance \$
Jan. 1			B/F 25,000
Jan. 31	22,000	21,000	26,000
Feb. 28	22,000	21,000	27,000
Mar. 31	22,000	21,000	28,000
Apr. 30	22,000	21,000	29,000
May 31	22,000	22,000	29,000
June 30	22,000	22,000	29,000
July 31	23,000	22,000	30,000
Aug. 31	23,000	22,000	31,000
Sept. 30	23,000	22,000	32,000
Oct. 31	23,000	22,000	33,000
Nov. 30	23,000	22,000	34,000
Dec. 31	23,000	22,000	\$35,000
	\$270,000	\$260,000	

An Illustrative Example—Including Change-over Procedures 199

CASH AT BANK ACCOUNT

Date	Item	Collections \$	Payments \$	Balance \$
Jan. 1	Balance			B/F 26,000
Jan. 31	AR	21,000		
	AP		14,500	
	A & S		1,500	31,000
Feb. 28	AR	21,000		
	AP		14,650	
	Dividends		10,000	
	A & S		1,500	25,850
Mar. 31	AR	21,000		
	AP		14,650	
	Taxation		10,000	
	A & S		1,500	20,700
Apr. 30	AR	21,000		
	AP		14,650	
	A & S		1,500	25,550
May 31	AR	22,000		
	AP		14,800	
	A & S		1,500	31,250
June 30	AR	22,000		
	AP		14,800	
	A & S		1,500	
	Interest		3,500	33,450
July 31	AR	22,000		
	AP		19,900	
	A & S		1,500	34,050
Aug. 31	AR	22,000		
	AP		20,100	
	A & S		1,500	34,450
Sept. 30	AR	22,000		
	AP		20,100	
	A & S		1,500	34,850
Oct. 31	AR	22,000		
	AP		20,100	
	A & S		1,500	35,250
Nov. 30	AR	22,000		
	AP		20,300	
	A & S		1,500	35,450
Dec. 31	AR	22,000		
	AP		20,300	
	A & S		1,500	\$35,650
		\$260,000	\$250,350	

Note: AR = Accounts receivable.
 AP = Accounts payable.
 A & S = Administration and selling expenses.

200 Accounting for Price-level Changes—Theory and Procedures

CALCULATION OF LOSS ON MONETARY ITEMS HELD

These are calculated by the XYZ Company on the price movements of trading stocks, and it was noticed that these prices increased by 1% on February 1st, May 1st, August 1st, and again on November 1st.

It will, therefore, be necessary to obtain the balances of the Accounts Payable, Accounts Receivable, and Cash at Bank Accounts as at those dates and to calculate the profits and losses accordingly, i.e. at 1% in each case.

Date	Accounts payable		Accounts receivable		Cash at bank	
	Balance	Profit	Balance	Loss	Balance	Loss
	\$	\$	\$	\$	\$	\$
Feb. 1	20,500	205	26,000	260	31,000	310
May 1	22,000	220	29,000	290	25,550	255.5
Aug. 1	23,500	235	30,000	300	34,050	340.5
Nov. 1	25,000	250	33,000	330	35,250	352.5
		<u>\$910</u>		<u>\$1180</u>		<u>\$1258.5</u>

<i>Summary</i>		\$
Accounts payable	Profit	910
Accounts receivable	Loss	1180
Cash at bank	Loss	1258
	<i>Loss</i>	<u>\$1528</u>

CAPITAL RESERVE ACCOUNT

	\$	\$
Opening balance, January 1st		143,500
Revaluation of land		4,000
Revaluation of buildings	20,000	
—revaluation of depreciation provision	10,000	
—retrospective depreciation adjustments during the year (\$10,500 — \$10,250)	250	
		<u>9,750</u>
Revaluation of fittings	1,000	
—revaluation of depreciation provision	500	
—retrospective depreciation adjustments during the year (\$2,600 — \$2,550)	50	
		<u>450</u>
Revaluation of Inventories (see Inventories A/c)		1,886
Creation of loss on monetary items held (see above)		1,528
		<u>\$161,114</u>
= Closing balance, December 31st		

An Illustrative Example—Including Change-over Procedures 201

INVENTORIES ACCOUNT

Date	In		Out		Balance		Value \$
	Qty.	Price \$	Qty.	Price \$	Qty.	Price \$	
Jan. 1					500	100	50,000
Jan. 31	150	100	166	100	484	100	48,400
Feb. 1	Revaluation to \$101 each				484	101	48,884
Feb. Mar. & April	450	101	500	101	434	101	43,834
May 1	Revaluation to \$102 each				434	102	44,268
May, June & July	500	102	500	102	434	102	44,268
Aug. 1	Revaluation to \$103 each				434	103	44,702
Aug. Sept. & Oct.	600	103	500	103	534	103	55,002
Nov. 1	Revaluation to \$104 each				534	104	55,536
Nov. & Dec.	400	104	334	104	600	104	\$62,400

SUMMARY OF INVENTORY REVALUATIONS

			\$
Feb. 1	484	@ \$1	484
May 1	434	@ \$1	434
Aug. 1	434	@ \$1	434
Nov. 1	534	@ \$1	534

Total inventory revaluations = \$1886

XYZ COMPANY
 WORKSHEET FOR PREPARATION OF FUNDS STATEMENT FROM
 BALANCE SHEETS IN HISTORIC COSTS

Item	Balance sheet at 1 Jan. 19...		Balance sheet at 31 Dec. 19...		Differences		Adjustments		Funds		
					Dr.	Cr.	Dr.	Cr.	Application	Source	
Land	40,000		40,000			5,000	5,000 (c)		—	—	
Buildings	100,000		95,000			2,000	2,000 (d)		—	—	
Fittings	10,000		8,000						—	—	
Inventories	49,000		62,200		13,200				13,200	—	
Accounts receivable	25,000		35,000		10,000				10,000	—	
Cash at bank	26,000		35,650		9,650				9,650	—	
Paid-up capital		120,000		120,000					—	—	
Undistributed profits		20,000		30,850		10,850	22,850 (a)	12,000 (f)	—	—	
Debentures		70,000		70,000		6,000			—	6,000	
Accounts payable		20,000		26,000		7,000	17,000 (b)	10,000 (d)	—	—	
Taxation provision		10,000		17,000		2,000	12,000 (f)	10,000 (e)	—	—	
Dividend provision		10,000		12,000		2,000			—	—	
Totals	\$250,000	\$250,000	\$275,850	\$275,850	\$32,850	\$32,850	\$78,850	\$78,850	\$52,850	\$52,850	
					Net profit—before taxation						
					Depreciation						39,850
					Taxation paid						7,000
					Dividends paid						10,000
											10,000
											\$52,850

CHAPTER 14

MISCELLANEOUS MATTERS

IN THIS chapter it is intended to discuss many matters which are of importance but which are not large enough for individual chapters.

Comparisons with Previous Periods

Comparisons with the results of previous periods, while being of some importance to management, would seem to be of much more interest to shareholders, and this sort of information is usually contained in the annual reports of companies. In some countries it is obligatory for the figures for the previous year to be shown in a separate column in the published profit statement and balance sheet.

Management is (or should be) more concerned with comparisons, month by month, between actual performances and *budgeted* performances for the current period. Comparisons with the results of previous periods cannot be much more than of interest value to management, and cannot be a vital control tool.

When comparisons are made with the prior year's (or years') figures in the annual report, should those figures be "updated" and be shown in prices current as at the end of the present year—or should they be left in prices current at the time they were prepared? To restate the prior year's figures would seem to be a desirable procedure, especially if prices have moved considerably during the current year. It has nothing to do with the accounting

records themselves and is merely a matter of reporting. However, a considerable amount of work might be necessary in order to restate the previous year's figures in current prices in an accurate fashion. Many indexes and many prices of many assets and commodities are involved, and the carrying out of the work with great accuracy might not be an economic proposition in many or most cases.

The following is an extract from the American Institute of Certified Public Accountants' Accounting Research Study No. 6 on this matter—"If the price level is changing, and current year's statements are stated in terms of the current price level, the restatement of prior years' data is unavoidable."¹

It is not agreed that restatement is "unavoidable". A comparison of the 1961 and 1962 Annual Reports of N.V. Philips' Gloeilampenfabrieken (pp. 23 and 24 respectively) does not seem to reveal any evidence of the restating of prior years' results in prices applying at the end of 1962. This does not prove that restating should not be done but it does show that the company which probably has the most elaborate integrated accounting systems and statistics for dealing with changing prices has decided that restating is not "unavoidable". If the major price indexes applying during the present and previous years are also displayed in the annual report, this would be more satisfactory than showing the *unadjusted* prior year's figures without comment.

Tables allowing the comparison of many important ratios with those of the current year would seem to be a more important device than the mere restatement of last year's figures, as it would give the shareholders some real information which they might be incapable of calculating themselves. Ratios, of course, are not significantly affected by fluctuating prices.

It is noticed that in their 1961 and 1962 Annual Reports, the Philips people give these percentages, etc., for each of the previous 10 years, in addition to showing the actual figures for the items in the prices which were current at the time:

¹*Reporting the Financial Effects of Price-level Changes*, p. 14.

Trading profit as a percentage of sales.
Trading profit as a percentage of total capital employed.
Net profit (after tax) as a percentage of sales.
Net profit (after tax) as a percentage of net worth.
Net profit (after tax) per ordinary share.
Tax on profits as a percentage of profits.
Retained profit as a percentage of net profit.
Dividend rate on ordinary shares.
Dividend rate on preference shares.
Ratio of net worth to total liabilities.
Ratio of net acquisitions to depreciation.
Stocks as a percentage of sales.
Trade debtors—average credit term (in months).
Ratio of current assets to short-term liabilities and provisions.

It is noticed in the American Institute of Certified Public Accountants' Accounting Research Study No. 6 that it is thought that the restating of figures of previous years (i.e. for comparison purposes) might have a possible "unsettling effect on the reader of the statement", supposedly because the reader might notice that last year's figures have been altered this year. The report goes on to say that this unsettling effect on the reader of the statement

can be minimized by casting comparative data (e.g. sales, net profit, for each of the past five years) in the form of ratios or percentages. The *percentage* of adjusted net profit to adjusted sales, for example, for a past year is not altered by restating the financial statements of that year in terms of the price level at any other point of time. The same is true of the *ratio* of adjusted current assets to adjusted current liabilities, or the *ratio* of income taxes to (adjusted) net profit before tax. In brief, the introduction of price-level adjusted data into financial reporting can be the occasion for a change in emphasis in presenting comparative data, a change away from "absolute" dollar figures to true comparisons, such as ratios, percentages, and trends.²

Capital Reserve Accounts

It will have been noticed that the author has no strong feelings about the title of the capital reserve accounts and has no objection to using the one account for land revaluations, building revaluations, inventory revaluations, creating profits and losses on the

²*Op. cit.*, p. 56.

holding of monetary items, etc. This was obvious from the use made of the Capital Reserve Account in the XYZ Company example in Chapter 13.

Probably a better title for the account would be Capital Adjustment Account. This might better indicate its purpose, but while prices continue to rise, the use of the words Capital Reserve Account will indicate clearly that there is no way in which cash dividends can be paid from any existing balances.

If prices were to fall there would, however, be objections to creating debit balances in capital reserve accounts, and the term Capital Adjustment Account would denote the purpose of the account more clearly. There would, of course, be people who would also object to creating debit balances in capital adjustment accounts, but if the real capital invested in a firm has dropped below the money capital originally invested, then it is misleading to continue to pretend that the money value of the capital amounts paid in still represents the current real value of the firm.

Picture a company with a paid-up capital of \$100,000 all invested in land which is rented to farmers. If the current real value of the land drops to half of this figure, i.e. \$50,000, then the current real investment in the company's assets is \$50,000 and not \$100,000. The Land Account in the ledger must be written down accordingly and the balance sheet should show:

	\$
Paid-up capital	100,000
<i>Less</i> Capital adjustment	50,000
	<hr/>
	\$50,000
	<hr/>
Land	\$50,000
	<hr/>

The current value of the real capital of the company (land) in this case is \$50,000 and the net rents should be compared with this amount and not with \$100,000 when calculating the return on capital. If this is not done the management of the company could be misled in various ways. It could be that accountants contributed to the severity and the depth of the disastrous

depression of the early 1930's by the incorrect ways they understated both profits and return on capital in that period.

In this Land example, the shareholders, as individuals, might be better off or worse off depending on how the prices of their consumer goods have varied in comparison with the size of their dividend payments and with the prices of the company's shares on the stock exchange. But this is a different matter. It is completely separate from the company itself and from the way in which the company records events as they affect it.

When the procedures recommended in this book are followed, large balances in the capital reserve account(s) could be built up over the years if prices continue to rise. When the shares of a company have a par value (as distinct from no-par value shares) consideration could be given to converting part or most of such balances by the issue of bonus shares. Such increases in the number of issued shares tend to reduce the stock exchange market value per share and the dividend percentage on paid-up capital. Both of these reductions often help to give the unsophisticated layman a better image of a company. High dividend percentage rates, large share prices at the stock exchange, and large balances in capital reserve accounts all tend to give such laymen an incorrect picture of bloated wealth, exploitation, etc.

The Position of Ordinary Shareholders

When people become ordinary shareholders in companies they receive no guarantee that they will receive dividends, nor do they normally receive any assurances that they will ever be able to recoup all or part of their investment. Usually they rank after preference shareholders and secured creditors for both dividends and return of capital. Their reward, if any, occurs when the company becomes successful, i.e. when it earns profits far in excess of its fixed commitments and when increased dividends also result in rising share prices at the stock exchange (if the shares are quoted there). As the company grows, the interests of shareholders grow with it. So it can be seen that the ordinary

shareholder exposes himself to risks and also to chances of capital gains. One of these risks is that price levels of the assets and commodities used by the company may change in a way which affects the company adversely. If this occurs it is the shareholder who will suffer before the debenture holder.

The company, on the other hand, requires funds in order to operate, and these should be raised in ways which will result in the greatest economic benefit to the company in the long term. This means that the risk factors must be weighed accurately before undertaking a load of fixed interest commitments. Debenture interest and interest on unsecured notes are taxation deductions but dividends to shareholders are not. This can make the raising of funds by secured and unsecured debt attractive at times.

However, nearly all companies require a large buffer of ordinary shareholder capital in case things do go wrong. It is in the best interests of companies to maintain a popular, solid image at the stock exchange because this is where much future capital will be raised when expansions are contemplated. In order to establish and keep this image the company must exhibit the ability to maintain financial stability and must pay regular dividends of a desirable size. For this reason, it is in the interests of all companies to increase their dividends in step with any rises in the consumer price index at least. It is not suggested that this be done slavishly and to the penny, but each company should make this one of its aims when planning profits. Increased dividends usually mean increased stock exchange prices and this enhances the company's prospects of future capital raisings.

Institutional advertising is incurred with a view to promoting a favorable *merchandizing* atmosphere in which to solicit customers; cash dividends are paid to promote a favorable *investment* atmosphere in which to solicit investors. Institutional advertising is intended to maintain or advance the corporation's economic competence; cash dividends, its financial competence. Both are designed to create a favorable "corporate image"; both are intended to protect the corporation's objective of survival. Cash dividends, then, may be viewed as an insurance cost.³

³Li, D. H., *Accounting Review*, October 1960, p. 675.

Failure to increase dividends when profits are more than available for this purpose can encourage take-over bids and can seriously damage the public image of the company.

However, if profits, calculated using the firm's specific indexes and prices, are such that they do not permit dividends to be increased over the years in accordance with the consumer price index, it is the ordinary shareholder's bad luck.^{3a} It is one of the risks he takes when he invests in the shares. To the extent that these profits are low because the prices of those things which the company handles have moved in a different fashion from the consumer price index, this too is the shareholder's bad luck. However, his personal real investment might be more than "protected".

A company cannot pay dividends unless real profits do in fact exist, and they cannot exist until the total real permanent capital of the company has been protected. The paying of dividends out of book "profits" revealed by conventional accounting systems in historical costs has weakened many companies in the last 16 years—to the subsequent detriment of their shareholders.

If a company finds itself in a position where it cannot create profits of a sufficient size to increase dividends in accordance with increases in the consumer price level, and if the capital of shareholders at the stock exchange is suffering accordingly, it might be in the company's interests to consider selling out, being taken over, diversifying or changing its objects, etc.

Company Taxation

The profits of companies are taxable in many countries, but only in a few of these are deductions in current costs for depreciation and costs of goods sold allowable, i.e. before arriving at the taxable profits base.

If companies (and individuals) do not earn a real profit, then they should not be liable for taxation, and they should only be liable on real profits properly calculated.

^{3a}It is his "good luck" if dividends can be increased at a greater rate.

The profits of companies calculated by the conventional, traditional accounting in historical costs are in error when prices rise (or fall), and the amount of the error varies from company to company depending upon the quantity of fixed assets and inventories owned and their age, upon the rate of consumption of these, upon the movements in specific prices as they affect each company, and upon the size of monetary assets held. Over the past 16 years the profits of most companies have been overstated to some degree. This in itself, however, does not suggest that the total amount of taxation collected from companies has been excessive.

The central government decides on the total amount of taxation to be collected from the various parts of the private sector (depending on the state of the economy), and then determines the rates of taxation that will achieve this total. So that if company taxation were to be levied on "real" profits, the probability is that the overall total would remain the same. However, there would be a more equitable distribution of taxation incidence *between* companies.

Professors Mathews and Grant have shown how the textile industry in Australia paid taxes on *minus* current incomes in the years 1949–50 and 1950–1. For the year 1950–1 they assess that the taxes payable of £3.2 millions had to be paid out of a current income of minus £2.8 millions. This made the current income after tax "minus £6 million".⁴

This sort of thing shrieks of inequality and shows one very large reason why the Australian textile industry was not in a robust state at this time.

Why then is it that this state of affairs has been allowed to continue? Why is it that the taxation assessment acts have not been altered to allow for the deduction of *all* costs in current prices, i.e. including depreciation and costs of sales, etc.? Amendments to the taxation assessment acts cannot be expected while nearly all accountants continue to produce profit figures using

⁴*Inflation and Company Finance*, p. 104.

212 *Accounting for Price-level Changes—Theory and Procedures*

conventional historical costs. "If accountants and businessmen are so indifferent to the impact of inflation that they ignore it in their financial statements, why should Congress and the Treasury be ready to recognize it in the income tax return?"⁵

It could be that if the effects of price-level changes were incorporated in the accounting records of all companies, i.e. if profits were determined only after taking into account all costs in current prices, there would be a possibility that the central government might decide that the total of all company profits is such that companies cannot bear the total amount of taxation intended for them.

Individuals in business should only be taxed on "real" profits too. They too must be allowed to claim deductions for all costs in current prices. The whole taxation area is one of inequality, but until such time as accountants move to incorporate the effects of changing prices in their accounting records, nothing can be done and nothing will be done in this area.

In the meantime, those who do commence to recognize changing prices in their accounting records will be faced with more reconciliations every year when the time comes to prepare the taxation return. The many firms which have revalued their assets are coping with this already, and the problem is one that any well-designed bookkeeping system can overcome. Accounting records are for the benefit of the firm in its planning, controlling, and decision-making functions, and not for the sole benefit of the taxation authorities. If the only purpose of accounting records were the preparation of taxation returns, then firms should be recompensed for their trouble. On the other hand, if the only aid a firm obtains from its accounting records is the assistance it gives when preparing the taxation return, then the firm is wasting a potential money saver.

Further, the depreciation rates laid down in the taxation assessment acts are merely averages and it is not possible for them to reflect the facts in every firm in every industry. To adhere

⁵Moonitz, M. and Nelson, C. L., *Accounting Review*, April 1960, p. 213.

to them slavishly can only result in the determination of incorrect profit figures for the individual firm. When LIFO for costs of goods sold and accelerated rates for depreciation are allowable deductions for taxation purposes, they might assist individual companies, but the assistance once more does not result in equality between companies. Such allowances only result in a move further away from the correct answer.

Advantages of Accounting in Current Prices

The advantages to be derived by all firms from the adoption of accounting methods incorporating fully the effects of changing prices are many and varied. No attempt will be made here to cover these in anything but a general way; but it is necessary to condense into one small section reasons which make the adoption of such accounting methods an absolute necessity.

Real profit, as distinct from money profit, is revealed automatically and regularly. This in itself must be very meaningful for management decisions concerning the firm as a whole, individual products, and other individual segments of the business.

When current costs are readily available, better projections can be made when analysing proposals concerning replacements, new capital expenditures, "make or buy" problems, the location of new depots, new methods of distribution, and so on.

As was seen in Chapter 13, current costs are vital if meaningful returns on capital percentages are to be calculated and used by management. Post-audit examinations involving the examination of return percentages can mislead a company into making incorrect decisions if current costs are not used. Many companies have suffered through being deficient in this area.

Correct costs are vital for pricing decisions. If a firm is a price leader, it is necessary that the correct total and marginal current costs to make and sell each article be known. If a firm is not a price leader, and if its selling prices are set on the market, it is still vital that it have this current cost information so that it

can examine its margins for each article handled and decide if it can afford to continue with the various lines.

As was seen in the previous section, equitable taxation can only result if accountants take the bit between their teeth and attempt to account for changing price levels. Accountants must move in this direction first. The taxation authorities certainly will not. Those companies with largish investments (relatively) in fixed assets, stocks and net monetary assets all tend to be discriminated against by our existing taxation system based on historical money profits. Their managements have nothing to lose by insisting on the revealing of real profits in their accounting systems and by pushing for tax reforms.

The public relations of many companies would improve in many instances. Too many laymen are confused by the frequent press reports showing large profit figures and large dividend rates based on old capital structures. Most of these profit figures would be in the form of money profits and not in real profits, and should be reduced greatly in size. Further, if the assets of these companies were written up to their real values, and if the resultant capital reserves were turned into bonus shares, the reduced dividend rates would not startle the layman or cause him to complain about the excess profits of many companies. This would not be a matter of being dishonest to the layman. It would be giving him a better idea of the real situation.

The state of the economy as a whole stands to improve. At present, accountants tend to overstate profits when prices are rising, and thus add to business confidence and the inflationary spiral. This occurs through company expansion spending and through the increased consumer spending of higher dividends by shareholders. Conversely, when prices are falling, accountants tend to understate profits and dampen down business activity to a large degree. The production of real current information can only assist in the creation of the right business climate at the right time, and this is most important in our private enterprise type economy.

The allocation of resources in the nation would improve if the effects of changing price levels were incorporated in the accounting records of all firms. In our system of private enterprise, private capital investments are channelled into the various industries by decisions based largely on accounting data. Therefore, the optimum allocation of resources depends to a marked degree on sound accounting information. The responsibility for this falls squarely on the shoulders of accountants who must take care to produce "real" data to permit the correct flow of capital into capable hands and away from unneeded and inefficient industries and firms.

Not only does accounting for changing price levels enable the production of accurate profit figures, but it prevents the overpaying of dividends in times of rising prices—and vice versa. If many firms paid out dividends in excess of real profits over a number of years, their weakening condition could only result in instability in a private enterprise economy. The high dividends could cause temporary, artificial prices at the stock exchanges and possible disastrous re-investment in these companies.

Costs expressed in current prices would enable decisions, which are more correct, to be made concerning tariffs, government fixed prices, and wage awards in various industries. National income statistics would be more accurate and thus permit greater efficiency in the management of the nation.

The Auditor's Position

The accountant in public practice cannot be proud of his efforts to grapple with the problem of price-level changes. The same remarks apply to the accountant in commerce and industry, but they are not in the same strong position to act and to advise. There has been far too much apathy and too much talk about "objectivity". Although accounting is full of estimations concerning depreciation methods, depreciation rates, bad debt provisions, stock valuations, methods and rates of manufacturing expense allocations, the treatment of research and development

costs, profit on long-term construction contracts, hire-purchase accounting, accruals, etc., it seems as if accountants have reached saturation point and are incapable of going one step further. Auditors would not allow fire losses to be ignored. Why do they allow losses caused by rising prices to be ignored? Why do they allow profits to be overstated and assets understated when prices rise—and then allow the opposite to occur when prices fall? These questions are difficult to answer, but most blame could be attached to the various professional bodies. As was shown in Chapter 5, they have not been very positive about the matter of changing price levels.

Professor Goudekot of Philips believes that many accountants and auditors “do not object to the theory as such, but reject it on the ground that, since it is not acceptable for tax purposes, the application of the theory is of no importance”.⁶

There are other auditors who have condoned the handling of the price-level problem by the creation of secret reserves. Not only does the creation of secret reserves distort profit in the years in which the reserves are created, but profit is also distorted in the years which follow. Managements are thus denied the use of effective accounting information, return on capital calculations become a farce, and many companies leave themselves wide open to take-over bids.

However, the attitude of the Institute of Chartered Accountants of Scotland as regards accounting for price-level changes and the auditor is refreshing. Its 1954 statement included these words:

Inssofar as the position of an auditor is concerned, the council is of the opinion that what constitutes “a true and fair view” of the state of the affairs of a company and of the profit for a stated period must always be a matter for decision in relation to the facts of a particular case, but that there is no reason in principle why an auditor should qualify his report on accounts by reason only of some disclosed departure from the basis of historical cost.

The council would welcome experiments by individual undertakings which have as their objective the presentation of accounts in which all items in the trading and profit and loss account are expressed in pounds

⁶*Journal of Accountancy*, July 1960, p. 37.

sterling of the same purchasing power. . . . The desirability of showing in the balance sheet the capital employed expressed in pounds sterling of the same money value also merits consideration. . . . Where there is a departure from the basis of "historical cost" (whether in the body of the financial accounts or by way of supplementary statements), what has been done and the basis adopted should be clearly shown.⁷

This seems to be a sensible attitude and one that could be adopted by all auditors when clients account for changing price levels. Further, auditors should advise clients to account for changing price levels and to show clearly in the published accounts "what has been done and the basis adopted".

Mr. W. H. M. Digby, F.C.A., Partner, Yarwood Vane & Co., Chartered Accountants and New South Wales (Australia) auditor of Philips Electrical Industries, had this to say in October 1961 at a weekend convention arranged by the Australasian Institute of Cost Accountants:

I do not believe that application of the [current] replacement value theory to preparation of published accounts presents any real difficulties to the Auditor provided that the accounts so published clearly indicate the method used to arrive at the amount or value of the Assets, and the method of calculating depreciation of fixed assets charged to the Profit and Loss A/c.

I don't believe that "true and fair" presents any difficulty—those who advocate the current replacement theory, probably contend that a Balance Sheet drawn up on such a basis implies a greater degree of truth and fairness. However, provided the basis of valuation is clearly stated on the Balance Sheet, I believe an Auditor can state it is properly drawn up in accordance with the provisions of the [Companies] Act so as to give a true and fair view.⁸

It is hoped that many other auditors in many countries adopt this viewpoint. It is obvious that the senior partners of the large firm of Arthur Andersen & Co. have done so. These words come from the Price-level Accounting chapter of their book, *Accounting and Reporting Problems of the Accounting Profession*:

Changes in the general price level are a normal part of the environment in which business operates, and all of the effects of such price-level changes should be reflected in the financial statements.⁹

⁷*Accountants' Magazine*, February 1954, p. 109.

⁸*The Role of the Public Accountant in Accounting for Changes in Money Values*, 1961, pp. 6-7. ⁹p. 8.

The following extract from Arthur Andersen & Co.'s audit report in the published accounts of Ayrshire Collieries Corporation "as of June 30, 1961", shows that they more than render lip service to the matter of accounting for changing prices:

In our opinion, the accompanying financial statements referred to above present fairly the consolidated financial position of Ayrshire Collieries Corporation and subsidiaries as of June 30, 1961, and their consolidated net income for the year then ended, and were prepared in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Generally accepted principles of accounting for cost of property consumed in operations are based on historical costs and do not recognize the effect of changes in the purchasing power of the dollar since dates of acquisition or construction of the companies' depreciable property. In our opinion, therefore, the consolidated net income for the year is *more fairly* presented after deducting the provision for price-level depreciation because such provision does recognize the effect of changes in the purchasing power of the dollar.¹⁰

Another interesting extract from an auditor's report comes from Herdrich, Boggs & Co. In their audit report in the published accounts of the Indiana Telephone Corporation "as of December 31, 1961", they say:

In our opinion, the accompanying financial statements shown under Columns A present fairly the financial position of the Company as of December 31, 1961, and the results of its operations for the year then ended, in conformity with generally accepted accounting methods applied on a basis consistent with that of the preceding year.

In our opinion, however, the accompanying financial statements under Columns B *more fairly* present the financial position of the Company and its results of operations since recognition has been given to variations in the purchasing power of the dollar, as more fully set forth in Note 1 of the financial statements.¹¹

It would seem that auditors in the Netherlands are much more progressive than in most other countries as far as the matter of changing prices is concerned. Mr. Francis J. Walsh reports that:

The Netherlands Institute of Accountants, in its Rules on Professional Activities, requires that auditors must be able to express an opinion on whether the principles of valuation followed by clients are "in accordance

¹⁰A.I.C.P.A. Accounting Research Study No. 6, *op. cit.*, p. 212. Emphasis added.

¹¹*Ibid.*, pp. 196-197. Emphasis added.

with principles established by proper commercial practice". Thus, it is a matter of judgment on the auditors' part as to whether any one of several alternative bases of valuation are acceptable according to "proper commercial practice".

There is evidence that replacement value is gaining recognition among business executives as an acceptable valuation basis in the Netherlands. In 1954 a committee of business executives and accountants was formed by the Netherlands Employers' Organizations to consider valuation problems. In 1955 the committee reported that it regarded depreciation based on replacement value to be necessary for a correct determination of profits and to forestall erosion of capital. Furthermore, it recommended revaluation of all assets on the basis of current price levels. It concluded that it was a dangerous practice to fail to make such revaluations.¹²

¹²Walsh, Francis J., Jr., *Inflation and Corporate Accounting* (Studies in Business Policy No. 104, National Industrial Conference Board Inc., New York, 1962), p. 45.

CHAPTER 15

ACTUAL APPLICATIONS OF ACCOUNTING IN CURRENT COSTS— PHILIPS ELECTRICAL INDUSTRIES

UNFORTUNATELY, there are few firms throughout the world actually accounting for changing price levels in anything approaching a complete manner. There is an additional small percentage accounting for changing prices in various partial forms on a voluntary basis; and there is a further additional small (but larger) percentage accounting for changing prices in partial ways following on the enactment of certain revaluation and taxation statutes in several countries.

Philips Electrical Industries (N.V. Philips' Gloeilampenfabrieken) account for changing price levels in a completely integrated fashion in their large group of companies throughout the world, and they have been doing this for many years. Their methods have been investigated by the author during a visit to their Australian Head Office in Sydney during August 1963, and they will be discussed in the second part of this chapter. A study of the literature over the years has revealed no evidence of any other firm accounting for changing price levels in such a complete, integrated manner.

Some evidence of other forms of practical applications will be mentioned briefly now, and some of this information has been obtained from *Inflation and Corporate Accounting*, by Francis J. Walsh, Jr., and from Appendix D of the American Institute of Certified Public Accountants' Accounting Research Study No. 6, *Reporting the Financial Effects of Price-level Changes*.

The Reece Corporation of Waltham, Massachusetts, U.S.A., has for several years compiled supplementary income statements reflecting the effects of changing price levels. This is managed with the aid of worksheets established by Arthur Andersen & Co. working in conjunction with Professor R. C. Jones of Yale. The Reece Corporation was one of the four companies in Professor Jones' *Case Studies of Four Companies* referred to previously in this work. It would seem that all necessary adjustments are taken into consideration, but on a general index basis. However, the information is not injected into the corporation's actual accounting system on a day-by-day basis.

Since 1954, the Indiana Telephone Corporation has supplied supplementary information by preparing its reports in a two-column form. One column supplies the conventional historical cost data, and the second column takes into account fixed assets and depreciation restated by a wholesale price index. No other adjustments are made.

Beginning with the annual report for 1961, the Imperial Tobacco Company of Canada Ltd. has incorporated in its accounting system and reports, fixed assets and depreciation stated at current replacement values instead of in historic costs. This company proposes to restate these items every year.¹

Algemene Kunstzijde Unie N.V., a Dutch company known as A.K.U., has, since 1936, included inventories and depreciation at current replacement costs—but not the fixed assets themselves. We have seen how many business men in Holland look on this as conforming with sound business practice.

The following companies, etc., are some of those who merely restate depreciation each year in current prices: Sacramento Municipal Utility District, Iowa-Illinois Gas and Electric Co., Ayshire Collieries Corporation (operating in Indiana, Illinois and Kentucky, U.S.A.), John Summers & Sons Ltd. (England) and Joseph Lucas (Industries) Ltd. of England.

¹Coutts, W. B., "An Adoption of Replacement Value Depreciation", *Canadian Chartered Accountant*, May 1962, pp. 478-482.

In a letter dated 23 February 1962, which the author received from the Chart Room Supervisor of E. I. du Pont de Nemours & Co., he says:

We do in fact now calculate profit measurements based on replacement values of investments. . . . For management purposes, to afford a measure of the effects of inflation, we prepare annually an "Economic Return on Investment" report. This report compares, for the company as a whole and for our eleven industrial departments, (1) return on investment based on data reflecting the company's plant facilities revalued to, and depreciated on, the current cost to construct similar facilities with (2) the return based on the historic dollar cost of such facilities.

Many companies throughout the world have voluntarily revalued their fixed assets from time to time so as to ensure that depreciation charges are more realistic and so that total real investment in their companies may be more evident. A few companies in this category are the Broken Hill Proprietary Co. of Australia, Imperial Chemical Industries Ltd., Creole Petroleum Corporation of Venezuela, and the following English companies, the Bowater Paper Corporation Ltd., Selfridges Ltd., the Associated Portland Cement Manufacturers Ltd., and Unilever Ltd.

Many or most companies in the following countries have revalued fixed assets (and hence depreciation) when permitted by certain revaluation and taxation legislation: France,² Belgium, Germany,³ Austria,⁴ Italy, Sweden, Japan, Argentina,⁵ Brazil, and Chile.⁶ In some of these countries, e.g. Japan and France, certain revaluations are compulsory.

²Walsh, F. J., *op. cit.*, pp. 91-96. Holzer, H. P. and Schonfeld, H. M., "The French Approach to the Post-war Price-level Problem", *Accounting Review*, April 1963, pp. 382-388. Reynolds, P. D., "French Accounts", *Accountancy*, December 1961, pp. 733-738.

³Holzer, H. P. and Schonfeld, H. M., "The German Solution of the Post-war Price-level Problem", *Accounting Review*, April 1963, pp. 377-381.

⁴Kollaritsch, F. P., "Austria's Answer to Inflationary Profits and Taxation", *Accounting Review*, July 1961, pp. 439-445 and "Replacement Values in Practice—The Example of Austria", *N.A.A. Bulletin*, August 1961, pp. 35-46.

⁵Walsh, F. J., *op. cit.*, pp. 96-97.

⁶Salgado, I. P., "Accounting Reports in Chile", *Accounting Review*, April 1963, pp. 389-397.

Some of the well-known companies who have revalued their fixed assets at times in some of these countries are: Simca (France), Montecantini Mining and Chemical Co. (Italy), Nippon Telegraph & Telephone Public Corporation (Japan), Tokyo Shibaura Electric Co. Ltd. (Japan), and Yawata Iron and Steel Co. Ltd. (Japan).

When looking at the number of companies in the United States of America which have concentrated on the revaluation of fixed assets and/or depreciation only, it must be remembered that LIFO has been used increasingly in that country for charging out costs of sales ever since it was first allowed as a deduction for taxation purposes over 20 years ago. This method of charging costs of sales gives a close approximation of current costs for profit-determination purposes (although the opposite for balance-sheet purposes) in many or most cases. For this reason, the matter of inventories and costs of sales has escaped much attention in the literature on price-level adjustments from the U.S.A. This must be kept in mind when examining practical applications in that country.

Philips Electrical Industries (N.V. Philips' Gloeilampenfabrieken)

This is a large international industrial company with headquarters in Eindhoven in Holland. It has many subsidiary companies in many countries throughout the world and all account in accordance with a standard accounting manual. With all of the Philips companies the application of the current value theory is not merely a calculation technique used in preparing the annual statements. It is integrated in the accounting system of all sections of the concern at every stage. In this way and in its completeness, it differs from all other known applications of accounting for price-level changes—and in this way it is ensured by the Philips people that all information for management is compiled in current costs and that current costs enter into all management considerations and decisions.

Professor A. Goudekot, the chief internal auditor of the

Philips Company in Holland, drew the attention of the accounting fraternity throughout the world to his company and its accounting methods when he published an article, "An Application of Replacement Value Theory", in July 1960.⁷

In the discussion of the accounting methods of the Philips companies which follows, much use will be made of Professor Goudekot's concise article, his company's uniform accounting manual, and information given most willingly to the author at the Australian head office of the Philips Electrical Company in Sydney during August 1963.

There is much similarity between the practical methods used by the Philips Company and the methods advocated in the previous chapters of this work. This is not surprising as it is believed that any attempt to install an accounting system which injects the effects of price-level changes in a day-by-day integrated fashion will result in a system which is not unlike the methods advocated here.

Although this book has placed the interests of the firm first, the paramount idea behind the Philips system is to maintain "the purchasing power of stockholders' equity". This is the theme running through Professor Goudekot's article, through the Philips accounting manual, and through discussions with their senior accounting executives in Australia. Although they all speak of providing management with current information in current costs, this is merely to ensure that the whole organization is run efficiently for the ultimate benefit of shareholders. For example, the following are extracts from Professor Goudekot's article:

We in Philips believe that there can only be profit if, after the application of the replacement value theory, the purchasing power of stockholders' equity has been maintained.⁸

At Philips we hold to the view that there can be no recognition of income for a period unless the capital employed in the business at the beginning of the period has been maintained, that is to say, after it has been established that the purchasing power of that capital at the end of the period is equal to that at the beginning of the period.⁹

⁷*Journal of Accountancy*, July 1960, pp. 37-47.

⁸*Ibid.*, p. 41. ⁹*Ibid.*, p. 38.

Although Philips use specific indexes for costs of goods sold, inventories, depreciation and fixed assets, they use a cost of living index for monetary items, and they create a loss through "excess technological price fall" (to be discussed later) when revaluing inventories. This mixture of "maintaining the purchasing power of shareholders' funds", using specific indexes, using a cost of living index, and debiting profit and loss to a degree when revaluing inventories, might be explained by this statement by Professor Goudekot:

The management of a business enterprise, its shareholders, and the public require information on the operation of the enterprise, both as a picture of past performance and as an indication of future possibilities. Thus we are confronted with problems of internal and external presentation of information having both retrospective and prospective objectives. This information is required for internal use not only for managing the enterprise but also for the effective daily operation of its affairs at all levels in the organization. For external purposes the management renders an account of its stewardship and supplies any other information of the operations and prospects of the enterprise which may be considered useful.

*This implies that the method of calculation of the income and capital must be the same for both purposes and that the reports for both purposes may vary only to the details of information and frequency of issuance. There is therefore no reason to make any further distinction between internal and external requirements.*¹⁰

The accounting methods used by the Philips companies produce *profit for the year in average for the period prices and balance sheets in end of the period prices*. No attempt is made to "update" profit and loss account figures to end of the period prices.

They keep several *capital reserve accounts*. Although no real purpose can be seen in doing this, it might serve some accounting convenience. The capital reserve accounts listed in their world-wide chart of accounts are:

- 313 Revaluation reserve—Land, buildings, machinery and equipment.
- 314 Revaluation reserve—Dwelling houses.
- 315 Revaluation reserve—Technical initial costs.

¹⁰*Ibid.*, p. 45. Emphasis added.

226 *Accounting for Price-level Changes—Theory and Procedures*

316 (No account.)

317 Revaluation reserve—Stocks.

318 Reserve for diminishing purchasing power of nominal assets
(i.e. monetary assets).

These are lumped together for their external balance sheet.

Costs of goods sold and inventories

For all inventories of raw materials, work in process and finished products, standard costs are in operation in the Philips' empire. Detailed records are kept by the purchasing departments concerning the major items of raw materials used, and this information originates from market quotations, tenders, price lists, recent purchases, etc. This information is available to the estimating departments which keep detailed information of articles produced by the Philips' companies as well as those which are bought in. From this information, the estimating departments prepare indexes for many groups of related articles, and in so doing must take into account the trends of price levels of wages and of expenses of supplying subsidiaries and departments.

For example, some of the groups for which index series are kept in Australia by the Philips Company are valves, ferrites, wire, transistors, diodes, lighting equipment, radio, and television.

The movements in these indexes are followed very closely and the index which formed the starting point for the standard cost of every item is watched. As soon as the movement in the index for a related group of products indicates that failure to do something about the individual standard costs of those products will result in a serious miscalculation of costs of inventories consumed and in incorrect balance-sheet calculations, then interim revaluations are made.

However, as a rule the standard prices of individual articles are not revised more than once a year and in this way the practical procedures used by Philips differ slightly from those advocated in Chapter 9. Although the establishment of new individual standard prices present no insuperable difficulties when the articles concerned are few, it is claimed by the Philips people

that when the range of articles is very large, a detailed price review may be impracticable on account of the vast amount of work involved. This is so even though the Philips people say that the accounting in current prices is made more than possible by the use of modern accounting equipment.

Therefore, in lieu of altering the individual standard costs of individual articles in these interim revaluations, the Philips people use the indexes prepared for each group of related products in order to bring the total values of inventories (based on standard costs) into line with current costs, i.e. when and if necessary. For this purpose current value adjustment accounts (asset accounts) are opened and debited (in the case of a rise in price levels) with the credit entries going to the Revaluation Reserve—Stocks Account. The three current value adjustment accounts used are (all assets accounts):

- 107 Replacement Value Adjustment to Production Stocks.
- 117 Replacement Value Adjustment to Sundry Factory Stocks.
- 167 Replacement Value Adjustment to Commercial Stocks.

These accounts are kept in total form and the individual and standard stock records for individual items are not altered. Each entry in the replacement value adjustment accounts is the result of an arithmetic calculation involving

$$\frac{\text{the current index of the group concerned}}{\text{the index applying at date standard set}} \times \text{the standard cost of the entry.}$$

This means that when a purchase of raw materials is made after such an *interim* valuation, the entry is:

100 Production Stocks in Stores A/c	Dr. (@ standard price)
107 Replacement Value Adjustment to Production Stocks A/c	Dr. (with index adjustment)
440 Trade Creditors	Cr. (with invoice price)

If there is a price variance too, then the relevant account (771 Price Differences on Purchased Factory Stocks A/c) comes into the entry as well.

228 Accounting for Price-level Changes—Theory and Procedures

Similar entries are made when commercial stocks are *purchased* for resale after an interim revaluation. When articles are *manufactured* for sale after an interim revaluation, the net entry is:

160 Commercial Stocks in Stores A/c	Dr. (@ standard price)
167 Replacement Value Adjustment to Commercial Stocks A/c	Dr. (with index adjustment)
102 Work in Progress A/c	Cr. (@ standard price)
107 Replacement Value Adjustment to Production Stocks A/c	Cr. (with index adjustment)

When articles are sold to customers after an interim revaluation, the process is carried further and the entry is:

810 Standard Price Value of Sales A/c	Dr. (@ standard cost of sales)
811 Index Adjustments to Standard Price Value of Sales A/c	Dr. (with index adjustment)
160 Commercial Stocks in Stores A/c	Cr. (@ standard price)
167 Replacement Value Adjustment to Commercial Stocks A/c	Cr. (with index adjustment)

As the Philips standard accounting manual points out, if these three Replacement Value Adjustment Accounts are logically and consistently used, they would in principle always show balances representing the latest relevant indexes calculated on the relevant stocks on hand at standard prices.

However, in practice, this will not be so. In the first place differences may arise from the fact that the account is credited with the index on the precalculated consumption of materials and hours worked (in the case of production stocks) whilst it is debited with the index on the materials actually received and the budget allowances on the actual hours worked. Moreover, indices are by their very nature rounded figures which are not absolutely accurate. This factor too, may give rise to differences.

It is, therefore, necessary for each division and each subsidiary to check the balances in its three Replacement Value Adjustment Accounts frequently. This is done by recalculating them at the end of each financial year at least, on the basis of the last indexes for the year. If the amounts thus calculated differ from the balances of the Replacement Value Adjustment Accounts, these balances are adjusted. The other side of the adjusting entry goes to the Profit and Loss Account.

It will be agreed that the accounting procedures for interim revaluations described above are fairly involved, and it is contended that every effort should be made in practice to actually recast the standard costs of individual articles and products when significant changes in prices and costs occur. In these days of mechanical accounting aids, this should not cause much difficulty and would obviate the setting up of additional control accounts in the form of Replacement Value Adjustment Accounts, and would avoid the dichotomy of calculations for all receipts, movements and issues. The periodic checking of the balances of these accounts would also be avoided, as would the worries associated with the occasional discovery of serious discrepancies. The benefits of having correct current standard costs for all raw material items and products at all times would seem to be obvious and therefore a desirable aim.

Standard costs of articles are revised by the Philips people approximately once per year (i.e. if necessary) and when such revisions take place it is necessary to recast the value of the various stocks of inventories on hand. In each case the account used in the other side of the various revaluation entries is 317 Revaluation Reserve—Stocks Account.

However, if the Philips people consider that any of their new standard costs reflect the fact that their organization has been more efficient from a technological viewpoint than all industry in general, then an *additional* entry is made at the revaluation time for this “excess technological price fall”. This entry, in respect of the standard costs of the relevant articles, is:

651 Excess Technological Price Fall A/c	Dr.	(a Profit and Loss A/c item)
317 Revaluation Reserve—Stocks A/c	Cr.	(increasing capital reserves)

(i.e. for the additional amount that the inventories would have been written up if Philips had not been so efficient).

As this is a very interesting refinement, the following extract from the standard accounting manual of the Philips organization is given. This comes from the section dealing with the account

168 Provision for Excess Technological Price Fall of Commerce Stocks.

For the purpose of valuing stocks at replacement (current) value, which in actual practice is approximated from standard price or standard purchase price (both adjusted, if necessary, by indices), revisions must from time to time be made in the light of fluctuations in the price level.

One of the causes of cost price change is the decrease in price resulting from improved efficiency within the enterprise. This price movement is known as "technological price fall". If such price fall occurs in nearly all branches of industry of the same country, it is termed a *general technological price fall*. This general price fall constitutes part of the general price movement which calls for an entry on account 317 "Revaluation Reserve—Stocks".

It is, however, possible and even probable as far as the electrotechnical industry is concerned, that the technological price fall of the products of the individual enterprise will exceed the general technological price fall. This may be due to the fact that the relevant production technique is still in state of great development or that the efforts towards rationalization have been more successful in that particular enterprise than on average in the whole branch of industry. The excess of the technological price fall within the enterprise over the general technological price fall is termed the *excess technological price fall*. It must be noted that the technological price fall of the individual enterprise does only affect the company's own products or semi-manufacturers, whereas the general technological price fall relates to the total volume of goods.

For a correct determination of the excess technological price fall it is therefore necessary to subtract from the technological price fall within the enterprise only that part of the general technological price fall which relates to the added value of the products. For this purpose rough calculation methods may be applied.

The excess technological price fall results in a decrease of the purchasing power tied up in the stocks of goods manufactured within the enterprise, with the consequent danger that the capital (assets less liabilities) will not be maintained intact. This price fall therefore must not be charged to revaluation reserve but be booked as a loss.

In view of the fact that the excess technological price fall is the difference between:

- (a) the technological price fall within the enterprise, and
- (b) the general technological price fall,

it is necessary to compute items (a) and (b) separately.

The manual then proceeds to describe the ways to compute these two factors. The internal efficiency factor is computed for each group of related products.

Before examining this interesting idea, it must be remembered that it only relates to the production efficiency within the Philips companies and therefore relates only to their own products or semi-manufactures.

The first main point being made in the above quotation is that if the costs of all wages and other expenses in total industry were to increase by 5% during a period, and if general production efficiency in all industry were to increase by 2%, then there would be an increase in the general price level of only 3%. Therefore, increasing efficiency over the years is an offsetting factor to rising prices and inflation.

However, the Philips people have found that improvements in their own productive efficiency have tended to be greater than those in industry in general, and this difference, which they term "excess technological price fall", is accounted for at the time of revaluing stocks by a charge against profits (through the 651 Excess Technological Price Fall Account) and an increase in the 317 Revaluation Reserve—Stocks Account.

In order to explain the Philips procedures in this regard, it is supposed that the standard value of "own manufactured" inventories before revaluation is \$100,000, and that the new standard value is to be \$98,000. This has been caused by an increase in wages and expenses of 4% offset by an increase of efficiency in the Philips organization of 6%. The entry to record this will be:

317 Revaluation Reserve—Stocks	Dr.	\$2000
160 Commercial Stocks in Stores	Cr.	\$2000
(Being revaluation of inventories in accordance with new standard prices.)		

It will be noticed that this entry is in accordance with recommendations contained in Chapter 9 of this work.

However, at the time the above entry was made, it was discovered that the increase in productive efficiency in all industry in general during the period was only 2% as against the 6% at Philips. This difference of 4% would be accounted for by the Philips people as follows:

232 *Accounting for Price-level Changes—Theory and Procedures*

651 Excess Technological Price Fall A/c Dr. \$4000 (a Profit and
Loss A/c item)
317 Revaluation Reserve—Stocks A/c Cr. \$4000

(Being recording of the decrease of the purchasing power tied up in stocks of goods manufactured in order to maintain capital intact.)

It will be noticed that from the two entries above, the Revaluation Reserve—Stocks Accounts credit balance will be increased by the net amount of \$2000.

The manual says that this second entry is essential if capital is to be maintained intact. When addressing members of the Australasian Institute of Cost Accountants at Terrigal, N.S.W., in October 1961, Mr. E. W. Kerfoot, Chief Accountant, Philips Electrical Industries Pty. Ltd. in Australia, had this to say concerning this point:

Insofar as the internal productivity exceeds the national productivity, losses in the value of stock will arise. In other words the fall in prices arising from *excess* productivity over the general productivity will have the effect of a decrease in the purchasing power of the stocks of goods manufactured within the enterprise with the consequent danger that the capital (assets less liabilities) will not be maintained intact.¹¹

It is doubted if the creation of this entry, each time inventories are revalued in accordance with new standards, will meet the purpose of the Philips people, i.e. of “maintaining capital intact”. Their entry only concerns stocks of inventories on hand at the end of the accounting period. What about inventories manufactured and sold *during* the accounting period? It would seem that increasing internal efficiency will result in increasing efficiency credit variances from standards during the year and that these would be increasing profits. The debit to 651 Excess Technological Price Fall Account at revaluation date would seem to be only a relatively small offset to the credit efficiency variances created during the period.

¹¹*Accounting for Changes in Money Value—A Practical Application*, p. 9, the convention paper published by the N.S.W. Division of the Australasian Institute of Cost Accountants.

Further, it is thought that there is no need for this excess Technological Price Fall Account at all. It would seem that it is the offspring of an attempt to make the accounting system of the Philips organization serve two purposes, i.e. accounting for the firm itself on the one hand, and attempting to protect the personal interests of the shareholders on the other.

If, through increased internal efficiency, it now costs less to produce an article, then less real capital is needed to carry a stock of these items on the shelves. This becomes one of the facts of life as far as the overall firm is concerned and the capital reserve or capital adjustment account must be debited (i.e. the Revaluation Reserve—Stocks Account must be debited in the Philips case) and the account for the relevant inventories written down accordingly. All else being equal, less real capital is now needed by the firm to carry on in the industry in which it is situated. For this reason no excess technological price fall accounts were recommended in Chapter 9.

Depreciation and non-current assets

Basically, the Philips treatment of depreciation and non-current assets is similar to that recommended in Chapter 10. This can be seen from the following extract from Professor Goudekot's article:

The replacement value (of fixed assets) is determined on the basis of the trend of the specific price levels and not of the general price level: that is to say, the trend of prices is followed separately for buildings, dwelling houses, machinery, etc. Each group of assets is regularly revalued by means of index numbers. For instance, for a factory building, revaluation is on the basis of the index numbers for the cost of that type of building; for machine tools, according to market prices or, if machinery is manufactured in the company's own factories, on the basis of current costs; in cases where the individual machines cannot be classified in homogeneous groups, revaluation is computed item by item. Insignificant price fluctuations are ignored. Larger fluctuations are put through on an approximate basis as and when they arise. Depending upon the importance of the price fluctuations, an over-all revaluation per item is put through periodically although not necessarily each year. A department in the Philips organization which is allied to the purchasing department follows the trend in price levels; the accounting department

234 *Accounting for Price-level Changes—Theory and Procedures*

sees to the recording of the individual items in such a way that the information required for revaluation purposes is readily available.¹²

Mr. E. W. Kerfoot, in his paper mentioned previously, said:

In practice building replacement values are assessed by following the trends in construction costs per square foot for the different types of buildings. Enquiries to suppliers of machinery and equipment is the usual method of establishing (current) replacement values for machine tools.

When increases in price levels occur, the various fixed asset accounts themselves (and not temporary Replacement Value Adjustment Accounts as with inventories) and the respective plant ledger records, are written up in accordance with the above. The credit side of these entries involves these capital reserve accounts:

313 Revaluation Reserve—Land, Buildings, Machinery and Equipment
A/c.

314 Revaluation Reserve—Dwelling Houses A/c.

The Philips people also write up the respective balances of the various depreciation provision accounts at the same time—also against these capital reserve accounts. It was recommended in Chapter 10 that the retrospective adjustment to the depreciation provision accounts be made against the capital reserve accounts in this way and not against profits.

However, although the Philips people do this, they seem to believe that the retrospective adjustment should be made against profits. Professor Goudekot says, for example:

The revaluation of past depreciation should therefore be charged to the income account. In the Philips company this is not done for two reasons, namely:

1. Due to the size of the concern the composition of the total fixed assets as far as lives are concerned approximates an average. As a result, yearly replacements for all practical purposes are equal to the yearly depreciation. This implies that the capital invested in fixed assets always relates to the total of fixed assets of an average life and no deferred depreciation needs to be provided for.

¹²*Op. cit.*, pp. 38–39.

2. Against the income account a fund is being built up to provide for the maintenance of capital invested in assets which are hereafter referred to as "monetary assets", representing assets other than inventories, fixed assets, investments and intangibles.¹³

Professor Goudekot seems to be apologizing for doing something which is really theoretically correct. As was shown in Chapter 10, to charge the retrospective depreciation adjustment to the profit and loss account results in incorrect profit determination. Profit for a period is calculated by subtracting from revenues the current costs of earning those revenues—no more and no less. To subtract the retrospective depreciation as well would result in an understatement of profit. It would also be wrong to charge such retrospective adjustments to the Profit and Loss Appropriation Account because this would suggest that profit determination in previous periods had been incorrect. If current depreciation costs had been used in those periods the profit-determination process would have been correct as regards depreciation deductions.

Further, actual replacement funds tend to be provided if the funds retained in the business through annual depreciation charges in current values are reinvested in physical assets. In so far as such funds are not reinvested in physical assets and are held in the form of monetary assets, the calculation of losses on holding such monetary assets in times of rising prices will "take up the slack". The reasons given by Professor Goudekot for not charging the retrospective depreciation adjustments to the profit and loss account are quite sound theoretically and there is no need for him to say that these charges should be made "to the income account".

When prices decline, the Philips procedures for depreciation and non-current assets are the opposite to those described above, but with an important exception. Should the writing down of the net asset accounts (in times of decreasing prices) cause the relative capital reserve account to "be completely exhausted as a result of charges on account of price decreases, then the adjust-

¹³*Op. cit.*, p. 39.

ment of the replacement value will be charged to the income account, since it is a (Philips) rule that the revaluation reserve may never show a debit balance".¹⁴

This is not good theory. What applies on the "up" should also apply on the "down". This seems to be a case of attempting to account for the interests of the shareholders and forgetting that events should be accounted for as they affect the firm.

As has been pointed out previously, if the current value of all assets were to be halved overnight, then the real capital of firm (in dollars) would be halved, too. This fact must be recorded and this can only be done by creating debit balances in capital reserve accounts—or in capital adjustment accounts if that name be preferred. To refuse to allow revaluation reserve accounts to show debit balances does not reflect sound theory.

Although the Philips people do not show intangible assets in their external reports, they are included in internal records and reports. Establishment costs, representing expenditures made in connection with the starting up of production of new products, are capitalized (and then depreciated). Revaluations of this asset are made in ways similar to inventories and fixed assets. The capital reserve account concerned is 315 Revaluation Reserve—Technical Initial Costs.

Monetary items

The Philips people calculate losses on net monetary assets held during times of rising prices, and the American Institute of Certified Public Accountants' Accounting Research Study No. 6 says:

Only one company has come to our attention which has published statements for which the purchasing-power gain or loss on monetary items has been computed. N.V. Philips' Gloeilampenfabrieken (Philips Industries) of Eindhoven, the Netherlands, charges losses of purchasing power on capital invested in net monetary assets to income.¹⁵

¹⁴Goudekete, *op. cit.*, p. 39.

¹⁵*Reporting the Financial Effects of Price-level Changes*, p. 152.

Their reason for doing this and the method used are set out concisely by Professor Goudekot:

Since part of the stockholders' equity, is invested in other (monetary) assets, the purchasing power of that part will diminish in case of decrease in value of currency of the country. For this reason we calculate, on the basis of the cost-of-living index, how many currency units represent the same purchasing power as the part of capital which at the beginning of the period was invested in "monetary" assets. . . . Thus the income statement shows a result after the purchasing power of stockholders' equity has been maintained.

When making monthly balance sheets and income statements, the necessary information is always available at short notice. The intervals at which the calculations are made are determined by the pace at which the currency of the country is decreasing in value; the faster this pace, the shorter the intervals will be.¹⁶

This statement makes it obvious (again) that a main purpose of the whole Philips exercise is the maintenance of stockholders' funds, and this is probably the reason why they use a cost-of-living index. In Chapter 11 it was recommended that the index to be used for the calculation of the loss on monetary assets (when prices are rising) should be one which reflects the movements in the prices of those things for which the monetary assets will be expended eventually. It is thought that a cost-of-living index would not reflect this sort of price movement for the Philips Electrical companies in an accurate fashion. If specific indexes are used for inventories, fixed and intangible assets, it seems that it would be consistent to use specific indexes in the monetary assets area, too.

The Philips people calculate profits on monetary assets when the cost-of-living index falls, *but* only to the extent that a credit balance remains in the relative capital reserve account, 318 Reserve for Diminishing Power of Nominal Assets. As was pointed out previously, this rule that no debit balance may be shown in a capital reserve account is theoretically inconsistent. What applies on the "up" must apply on the "down".

The parent company in Holland has much long-term debt, but it is not known if it attempts to take this into account when

¹⁶*Ibid.*, p. 41.

ascertaining “net monetary assets” for the purposes of the loss (or profit) on net monetary assets calculation. If it does, monetary liabilities will exceed monetary assets, a large “profit” will result in times of rising costs of living, and the balance of the account, 318 Reserve for Diminishing Power of Nominal Assets, will have been reduced to a zero balance long ago. This means that if the Philips people *do* include long-term debt in “net monetary assets”, then no profit or loss is recorded on this item each year, i.e. because no balance remains in the relative capital reserve account to enable the yearly profit to be created. However, as Professor Goudekot has taken the trouble to devote a section of his paper to this matter of “losses on monetary assets”, it is assumed that the Philips people calculate profits and losses on monetary items in a way similar to that recommended in Chapter 11. That is, it is assumed that they do not attempt to calculate “profit” on long-term debt but regard it as part of the permanent capital.

It will be noticed that the base used by the Philips people for the calculation of the profits and losses on monetary items is that “part of capital which *at the beginning* of the period was invested in monetary assets”. In other words, the calculation of these profits and losses is made on the opening balance of the period.

As was pointed out in Chapter 11, this procedure results in accuracy only in those cases where the balances in the various accounts for monetary items do not alter throughout the year. If these balances *do* fluctuate, greater accuracy would be obtained by making the calculations at monthly rests in the way advocated in this work.

General

When concluding his paper at the convention of the Australasian Institute of Cost Accountants mentioned previously, Mr. E. W. Kerfoot confirmed that the Philips system is designed to maintain the purchasing power of stockholders’ equity by saying:

It has been emphasized that in Philips there can be no recognition of income, i.e. profit for a period, unless it has been established that the purchasing power of the capital employed at the end of the period is equal to that of the beginning of the period.

Measures are taken to ensure that this principle objective has been met. From a review of the Balance Sheet it can be established by means of the Consumer Price Index the inflationary losses incurred on the shareholders' equity. Insofar as this amount is met or exceeded by the additions to revaluation accounts arising from the procedures outlined, then no alterations are made to these accounts. *However, should the additions to revaluation accounts fall below the calculation mentioned then logically this must be brought to the required level by charging the difference against the profit and loss account.*¹⁷

This means that although many specific indexes are used throughout the accounting period, one general index adjustment at balance date would be made to convert a specific index profit to a general index profit, *if* transfers to the various capital reserve accounts during the period were insufficient to cover the movement in the consumer price index calculated on the total balance of stockholders' funds as at the beginning of the period. (Mr. Kerfoot goes on to explain that it has not been necessary to make any such adjustment to date.) Therefore, the capital that Philips are "maintaining" is either shareholders' funds plus a general index, or shareholders' funds plus the movements in the various specific indexes, whichever is the greater.

It is agreed that there is no harm in making this calculation on the balance of stockholders' funds as at the beginning of the period, and it is realized that it might be desirable in many cases to increase reserves by any amount by which transfers to capital reserves during the period may be deficient, *but* any such additional transfers to capital reserves should be treated as an *allocation* of profit (i.e. from the profit and loss Appropriation Account), and have nothing to do with the *determining* of profit itself. Such an amount would not be a cost of operating the firm, i.e. as far as the firm itself is concerned.

¹⁷*Op. cit.*, p. 12. Emphasis added.

Summary

In this section on the accounting methods of Philips Electrical Industries, mention has been made only of those instances where their procedures for accounting for changing prices differ from the recommendations contained in the previous chapters of this work. This might quite easily give the impression that the author has been over-critical. The truth of the matter is that the similarities between their methods and the procedures advocated here are great. It is also doubtful if the differences discussed in this chapter would cause significant differences in the profit determination process—especially in view of the fact that prices have continued to rise and there has been no possibility of exhausting balances in the various capital reserve accounts through falling prices.

In any case, the Philips people admit that their methods may have some theoretical imperfections. Professor Goudekot said:

We know that in Philips we do not apply the replacement value theory in all its details. Certainly theorists can criticize our application in some respects. As with all problems, it is not a question of the application of the theory in all its details; it is only a question of a practical application based on theoretical principles. Then a need is being fulfilled. In practice it is not the problem, but its solution which counts.¹⁸

It is really astounding that one company in the world could be so far in advance of all others in efficiency and sophistication in accounting methods. It would appear that no other company injects current costs into its day-by-day accounting procedures in the complete way that the Philips people do, and it would seem that they might be the only organization actually calculating profits and losses on monetary items.

That no concern has attempted to copy their methods might be understandable if the Philips Electrical Industries had been accounting for changing price levels for the last few years only, but they have been doing this for approximately 20 years. It is hoped that much publicity can be given to their methods so that others might decide to follow them, i.e. once it is known that such procedures have been tried and proved.

¹⁸*Op. cit.*, p. 47.

CHAPTER 16

CONCLUSION

CONSIDER the report of operations during a fiscal period for a firm in an industry characterized by large investments in property, plant, and equipment, and a slow inventory turnover. Over a period of time the firm has accumulated substantial holdings in marketable securities, perhaps in contemplation of further expansion. As is frequently the case, a first-in, first-out flow of its inventories may have been assumed and depreciation may be estimated by applying the straight-line method to the historical cost of its property, plant and equipment. Of course its marketable securities are carried "at cost".

How may the "net income for the year" produced by this type of financial accounting be validly used? Does it represent the amount which, when in available form, can be distributed without contracting operations? Or, stated another way, does it represent the amount which, if retained, can be used for expansion and growth? If it is greater than last period's net income, does it mean that the firm has been operated more profitably or that the firm's prospects have improved? Can we reasonably expect the same net income under identical operating conditions next period? Suppose we compare the report of operations with that of another firm of comparable size in the same business. If the second firm's sales are about the same, but its net income is less, can we reasonably conclude that it is less well managed? Such questions could be expanded almost indefinitely. But instead of listing those questions to which only negative answers can be given, let me restate the original question in the hope that someone will think of a positive answer. What is the nature of the amount of net income for the year, as determined by the application of accounting principles which are currently deemed to be generally accepted, or stated more generally, as determined by an accounting for historical costs as modified by conservatism?¹

This question of Robert T. Sprouse is a difficult one to answer, but whatever the "nature" of such an amount of net income is,

¹Sprouse, R. T., "Historical Costs and Current Assets—Traditional and Treacherous", *Accounting Review*, October 1963, p. 689.

it is useless for all practicable purposes and has no real meaning. It is a hybrid—and it is thought that this has been explained and demonstrated adequately in Chapters 4 and 5.

It is unfortunate that professional accounting bodies have not faced up to this fact in a more positive fashion over the last 20 years. This criticism applies more to the Institute of Chartered Accountants in England and Wales, which after 10 years is still apparently awaiting the perfect solution before acting any further in this matter. This criticism also applies to those other professional accounting bodies which have not offered one word of constructive advice to their members on this problem of changing prices.

The American Institute of Certified Public Accountants is to be congratulated for those progressive steps in recent years which resulted in Accounting Research Study No. 6, *Reporting the Financial Effects of Price-level Changes*, but it is somewhat unfortunate that most emphasis in this study is confined to the actual reporting side. It is also unfortunate that it ignores much of Accounting Research Study No. 3 and that the viewpoint adopted in this study is that of the shareholders and not that of the firm itself. It seems that the first problem to be tackled is the injecting of current cost data into the accounting system so that they are reflected automatically in day-to-day reports for management control and decision-making. However, the publication of Accounting Research Study No. 6 by the American Institute of Certified Public Accountants should result in a huge step forward along the road towards making accountants aware of the problems created by changing prices, and should result in many more attempts to report in (and account for) current costs.

It is also unfortunate that so many accountants are not prepared to think constructively about any new accounting problem. Anything new is theoretical nonsense until it has been applied and proved to be workable. Most accountants will listen only to ready-made “take home solutions”. They are not prepared to experiment in order to arrive at an answer which is more theoretically correct. If any practical difficulties exist, then the fact that

incorrect answers are being obtained by the easy way is usually ignored.

Not only are the accounting procedures recommended in the chapters of this work theoretically sound, but they have been applied in a somewhat similar fashion by Philips Electrical Industries. "It has been done." It is not just theoretical nonsense. The procedures advocated here can be applied by any firm.

Much publicity should be given to the accounting methods adopted by the Philips people over the past many years. This would then show that not only is accounting for changing prices on a day-by-day basis possible, but that it has been developed to a very high degree of sophistication by one company with large world-wide ramifications. Similar adoptions by smaller less complicated firms would result in much less reorganization of accounting systems.

However, it is difficult to "teach old dogs new tricks" and the adoption of accounting methods incorporating the automatic recognition of changing prices might only come about by educating the young and waiting for them to gradually replace those presently in charge of both the professional bodies and the accounting systems of firms large and small.

To say that price levels are now constant and that the problem has passed is ignoring facts. Many assets, purchased when prices were much lower than what they are now, are still in use, and others are still on many shelves. Further, an inspection of the statistics in Chapter 2 will show that price levels have never been constant—and it is thought that they never will be.

Despite the attempts by many academics to devise theoretical bases of accounting which avoid the "matching process" (i.e. the matching of revenues and related costs) in the profit-determination process, the practical necessity of recording day-by-day events, such as purchases and sales and amounts owed, and the need for weekly and/or monthly profit figures, both make the adoption of the matching process something which cannot be avoided. Accountants must therefore develop methods which will result in answers as close as possible to the theoretical ideal.

244 *Accounting for Price-level Changes—Theory and Procedures*

The thesis in these pages has been that something should be done about accounting for the effects of changing prices as they affect each firm, that it can be done in a way which is close to the theoretical ideal, and that it has been done by one large organization made up of world-wide companies.

BIBLIOGRAPHY

- AMERICAN ACCOUNTING ASSOCIATION, *Accounting and Reporting Standards for Corporate Financial Statements*, 1957.
- AMERICAN ACCOUNTING ASSOCIATION, "Report of the Management Accounting Committee", *Accounting Review*, July 1962.
- AMERICAN ACCOUNTING ASSOCIATION, "Tentative Statement of Accounting Principles Affecting Corporate Reports", *Accounting Review*, June 1936.
- AMERICAN ACCOUNTING ASSOCIATION'S COMMITTEE ON CONCEPTS AND STANDARDS—LONG-LIVED ASSETS, "Accounting for Land, Buildings and Equipment", *Accounting Review*, July 1964.
- AMERICAN ACCOUNTING ASSOCIATION'S COMMITTEE ON CONCEPTS AND STANDARDS—INVENTORY MEASUREMENT, "A Discussion of Various Approaches to Inventory Measurement", *Accounting Review*, July 1964.
- AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS, *Changing Concepts of Business Income*, New York, Macmillan, 1952.
- AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS (Accounting Research Division), *Reporting the Financial Effects of Price-level Changes* (Accounting Research Study No. 6), New York, 1963.
- AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS, *Restatement and Revision of Accounting Research Bulletins* (Accounting Research Bulletin No. 43), New York, 1953.
- ANTON, H. R., *Accounting for the Flow of Funds*, Boston, Houghton Mifflin Co., 1962.
- ARNETT, H. E., "What Does 'Objectivity' Mean to Accountancy?", *Journal of Accountancy*, May 1961.
- ARTHUR ANDERSEN & Co., *Accounting and Reporting Problems of the Accounting Profession* (privately printed), 1962.
- ASSOCIATION OF CERTIFIED AND CORPORATE ACCOUNTANTS, *Accounting for Inflation*, London, Gee & Co. Ltd., 1952.
- BARCLAY, H. J., "Goodwill on Acquiring a Business", *Canadian Chartered Accountant*, September 1963.
- BAXTER, W. T., "Inflation and Accounts", *The Investment Analyst*, December 1962.
- BAXTER, W. T. (Ed.), *Studies in Accounting*, Sydney, Law Book Co. of Australasia Pty. Ltd., 1950.
- BAXTER, W. T. and DAVIDSON, S. (Eds.), *Studies in Accounting Theory*, London, Sweet & Maxwell Ltd., 1962.
- CANNON, A. M. (as quoted by Paton, W. A.), *Journal of Accounting Research*, Spring, 1963, p. 57.

- CHAMBERS, R. J., *Accounting and Action*, Sydney, Law Book Co. of Australasia Pty. Ltd., 1957.
- CHAMBERS, R. J., *Measurement in Accounting* (an unpublished monograph), University of Sydney, 1963.
- CHAMBERS, R. J., *Towards a General Theory of Accounting*, Melbourne, The Australian Society of Accountants, 1961.
- COMMONWEALTH BUREAU OF CENSUS AND STATISTICS, *Labour Report*, 1961.
- CORBIN, D. A., "Current Replacement Costs", *Journal of Accountancy*, December 1960.
- COUGHLAN, J. W., "Applicability of the Realization Principle to Money Claims in Common Dollar Accounting", *Accounting Review*, January 1955.
- COUTTS, W. B. "An Adoption of Replacement Value Depreciation", *Canadian Chartered Accountant*, May 1962.
- DIGBY, W. H. M., *The Role of the Public Accountant in Accounting for Changes in Money Values*, Sydney, Australasian Institute of Cost Accountants, 1961.
- EDWARDS, E. O. and BELL, P. W., *The Theory and Measurement of Business Income*, Berkeley and Los Angeles, University of California Press, 1961.
- EDWARDS, R. S., "The Nature and Measurement of Income", In *Studies in Accounting* (Baxter, W. T., Ed.), Sydney, Law Book Co. of Australasia Pty. Ltd., 1950.
- EPPS, M. I., "Realistic Accounting under South American Inflation", *Journal of Accountancy*, January 1961.
- GILMAN, S., *Accounting Concepts of Profit*, New York, Ronald Press Co., 1956.
- GOUDEKET, A., "An Application of Replacement Value Theory", *Journal of Accountancy*, July 1960.
- GRAHAM, W., "Depreciation and Capital Replacement in an Inflationary Economy", *Accounting Review*, July 1959.
- GRAHAM, W., Letter to *Journal of Accountancy*, August 1960.
- GREENER, M. J., "Profit—Fact or Fiction?", *Accountant*, 7 October 1961.
- GYNTHNER, R. S., "Accounting for Inflation", *Australian Accountant*, July 1961.
- HENDRIKSEN, E. S., "Current Trends in Financial Reporting of Price-level Changes" (an unpublished paper read to the American Accounting Association at Stanford University, California, August 1963).
- HENDRIKSEN, E. S., *Price-level Adjustments of Financial Statements*, Pullman, Washington State University Press, 1961.
- HENDRIKSEN, E. S., "Purchasing Power and Replacement Cost Concepts—Are They Related?", *Accounting Review*, July 1963.
- HOLZER, H. P. and SCHONFELD, H. M., "The French Approach to the Post-war Price-level Problem", *Accounting Review*, April 1963.
- HOLZER, H. P. and SCHONFELD, H. M., "The German Solution of the Post-war Price-level Problem", *Accounting Review*, April 1963.
- INSTITUTE OF CHARTERED ACCOUNTANTS IN ENGLAND AND WALES, *Recommendations on Accounting Principles*, London, 1958.
- INSTITUTE OF CHARTERED ACCOUNTANTS OF SCOTLAND, Statement to members concerning changing prices, *Accountants' Magazine*, February 1954.

- INSTITUTE OF COST AND WORKS ACCOUNTANTS, *The Accountancy of Changing Price Levels*, London, Gee & Co. Ltd., 1952.
- JONES, R. C., *Effects of Price-level Changes on Business Income, Capital and Taxes*, American Accounting Association, 1956.
- JONES, R. C., *Price-level Changes and Financial Statements—Case Studies of Four Companies*, American Accounting Association, 1955.
- KERFOOT, E. W., *Accounting for Changes in Money Value—A Practical Application*, Sydney, Australasian Institute of Cost Accountants, 1961.
- KERR, J. ST. G., "Three Concepts of Business Income", *Australian Accountant*, April 1956.
- KOHLER, E. L., *A Dictionary for Accountants*, Englewood Cliffs, N.J., Prentice-Hall Inc., 1957.
- KOLLARITSCH, F. P., "Austria's Answer to Inflationary Profits and Taxation", *Accounting Review*, July 1961.
- KOLLARITSCH, F. P., "Replacement Values in Practice—The Example of Austria", *N.A.A. Bulletin*, August 1961.
- LADD, D. R., *Contemporary Corporate Accounting and the Public*, Homeward, Richard D. Irwin Inc., 1963.
- LI, D. H., "The Nature of the Corporate Residual Equity Under the Entity Concept", *Accounting Review*, April 1960.
- LI, D. H., "The Nature and Treatment of Dividends Under the Entity Concept", *Accounting Review*, October 1960.
- MACNEAL, K., "What's Wrong with Accounting?", In *Studies in Accounting Theory* (Baxter, W. T. and Davidson, S., Eds.), London, Sweet & Maxwell Ltd., 1962.
- MASON, P., "*Cash Flow*" *Analysis and the Funds Statement* (Accounting Research Study No. 2), American Institute of Certified Public Accountants, New York, 1961.
- MASON, P., *Price-level Changes and Financial Statements—Basic Concepts and Methods*, American Accounting Association, 1956.
- MATHEWS, R., *Accounting for Economists*, Melbourne, F. W. Chesire, 1962.
- MATHEWS, R. and GRANT, J. MCB., *Inflation and Company Finance*, Sydney, Law Book Co. of Australasia Pty. Ltd., 1958.
- MAY, G. O., "A Talk with George O. May", *Journal of Accountancy*, June 1955.
- MEY, A. and MOST, K. S., "Replacement Value Accounting", *Accountant*, 7 September 1963.
- MOONITZ, M., *The Basic Postulates of Accounting* (Accounting Research Study No. 1), American Institute of Certified Public Accountants, New York, 1961.
- MOONITZ, M. and NELSON, C. L., "Recent Developments in Accounting Theory", *Accounting Review*, April 1960.
- MUTTON, A. R., "Accounting for Changes in Money Values", *Australian Accountant*, August 1962.
- MUTTON, A. R., "Capital Erosion—The ABC of It", *Chartered Accountant in Australia*, December 1960.
- NICHOLS, W. E., "Accounting for Inflation—Measurement of Current Income", *Australian Accountant*, September 1961.

- PARKER, W. E., "Changes in the Purchasing Power of Money", *Accountant*, 3 and 10 November 1962.
- PATON, W. A., *Advanced Accounting*, New York, Macmillan, 1941.
- PATON, W. A., "Depreciation—Concept and Measurement", *Journal of Accountancy*, October 1959.
- PATON, W. A. and LITTLETON, A. C., *An Introduction to Corporate Accounting Standards*, American Accounting Association, 1940.
- PREST, A. R., "Replacement Cost Depreciation", *Accounting Research*, Vol. 1.
- QUEENAN, J. W., "Postulates: Their Place in Accounting Research", *Journal of Accountancy*, August 1962.
- REYNOLDS, P. D., "French Accounts", *Accountancy*, December 1961.
- RIVERIN, A., "Accounting Profit: Myth or Reality?", *Cost and Management*, October 1961.
- ROYAL COMMISSION ON THE TAXATION OF PROFITS AND INCOME, Minutes of Evidence, London, H.M.S.O., 1952.
- SALGADO, I. P., "Accounting Reports in Chile", *Accounting Review*, April 1963.
- SANDS, J. E., *Wealth, Income and Intangibles*, University of Toronto Press, 1963.
- SOLOMONS, D., "Income—True and False", *Accountants' Journal*, October 1948.
- SPROUSE, R. T., "Historical Costs and Current Assets—Traditional and Treacherous", *Accounting Review*, October 1963.
- SPROUSE, R. T., "The Significance of the Concept of the Corporation in Accounting Analyses", *Accounting Review*, July 1957.
- SPROUSE, R. T. and MOONITZ, M., *A Tentative Set of Broad Accounting Principles for Business Enterprises* (Accounting Research Study No. 3), American Institute of Certified Public Accountants, New York, 1962.
- SWEENEY, H. W., *Stabilized Accounting*, New York, Harper & Row, 1936, and Holt, Rinehart & Winston, Inc., 1964.
- WALSH, F. J., JR., *Inflation and Corporate Accounting* (Studies in Business Policy No. 104), New York, National Industrial Conference Board Inc., 1962.
- WILK, L. A., *Accounting for Inflation*, London, Sweet & Maxwell Ltd., 1960.
- WRIGHT, F. K., "Accounting for Inflation", *Australian Accountant*, July 1963.
- YORSTON, R. K., SMYTH, E. B. and BROWN, S. R., *Accounting Fundamentals*, Sydney, Law Book Co. of Australasia Pty. Ltd., 1963.
- YORSTON, R. K., SMYTH, E. B., and BROWN, S. R., *Advanced Accounting* (Vol. 2), Sydney, Law Book Co. of Australasia Pty. Ltd., 1959.
- ZEFF, S. A., "Replacement Cost: Member of the Family, Welcome Guest, or Intruder?", *Accounting Review*, October 1962.

INDEX

- Accelerated depreciation 129
see also Depreciation
- Accountants
auditors 215-19
commerce and industry 45
public practice 45
- Accounting Principles Board 24,
25, 26
- Accounts payable *see* Current liabilities
- Accounts receivable *see* Monetary assets
- Accretion 76-7
- Accruals *see* Current liabilities
- Advantages of accounting in current prices 213-15
- Algemene Kunstzijde Unie N.V. (A.K.U.) 221
- Allocation of resources 215
- American Accounting Association
Committees on Concepts and Standards
inventory measurement 28, 66
long-lived assets 28, 48*n*, 64, 65, 69
underlying corporate financial statements 25, 27
Management Accounting Committee 62*n*
- Statements on price-level changes 27-8
1936 Statement of accounting principles 9*n*
- American Institute of Certified Public Accountants
Accounting Principles Board 24,
25, 26
Accounting Research Bulletin No. 43 23-4
- Accounting Research Study No. 1 25
- Accounting Research Study No. 2 194-5
- Accounting Research Study No. 3
current market prices 26, 58
holding gains and losses 58, 79
intangibles 26
inventories 26, 58, 75
net profit 25
non-current assets 26
relationship to A.R.S. No. 6 80, 242
supplementary financial statements 26
- Accounting Research Study No. 6
comparisons with previous periods 205, 206
complete adjustments for price-level changes 19-20, 27
costs of goods sold 12
depreciation 12, 122*n*
monetary items 135-6, 137*n*, 154-5, 236
Philips Electrical Industries 236
practical applications 220
preference shareholders 152
relationship to A.R.S. No. 3 80, 242
return on capital 107*n*
supplementary financial statements 35, 44
unstable dollar 11
use of general price index 44
- Recommendations and statements concerning price-level changes 23-7, 33
- Similar to Institute of Chartered Accountants in England and Wales 24, 33

- Amortization
 goodwill 130-3
 intangible assets 130-3
- Anton, H. R. 194
- Applications of accounting in current costs 220-40
- Arnett, H. E. 61*n*
- Arthur Andersen & Co. 136, 153-4, 217-18, 221
- Assets, valuations 64-81
see also Inventories; *and* Monetary assets; *and* Non-current assets
- Associated Portland Cement Manufacturers Ltd. 222
- Association of Certified and Corporate Accountants 30-1
- Audit report examples 217-19
- Auditing
 auditors' position 215-19
 objective evidence 56, 62
 report examples 217-19
- Auditors *see* Auditing
- Average current costs
 costs of goods sold in 86, 88, 93, 94-106
 depreciation in 112-16
 losses on monetary items in 158-61
 Philips Electrical Industries use of 225
 profit in, or in end of period costs 171-80
- Ayrshire Collieries Corporation 218, 221
- Balance sheets
 adjustments are needed 19, 44
 audit reports 215-19
 conventional concept of 10
 illustrative example 179-92
 inventory valuation 82-106
 non-current asset valuation 107-33
 restatement of 45
 some proposals 34
 when price-levels change 14-15, 31
see also Inventories; *and* Investments; *and* Non-current assets; *and* Reserves; *and* Supplementary financial statements
- Barclay, H. J. 132*n*
- Baxter, W. T. 44, 124*n*, 164*n*
- Bell, P. W. 48*n*, 57, 58*n*, 69*n*, 71*n*, 73, 79, 80, 100, 108*n*, 123*n*, 165, 173
- Bonds *see* Long-term liabilities
- Bonus shares 208
- Bowater Paper Corporation Ltd. 222
- Broken Hill Proprietary Co. of Australia 222
- Brown, S. R. 9*n*, 10*n*
- Cannon, A. M. 71-2
- Capital adjustment account 207
- Capital reserves *see* Reserves
- Cash *see* Monetary assets
- Chambers, R. J. 15*n*, 53, 121*n*, 138
- Change-over procedures 184-6
- Commonwealth Bureau of Census and Statistics 5*n*, 7*n*, 60
- Companies Acts 217
- Comparisons with previous periods 204-6
- Conservatism 11
- Consolidated statements 11, 168
- Consumer Price Index
 in Australia 6
 in various countries 8
 suitability of 52-5
 use of, by Philips Electrical Industries 237, 239
- Copyrights, 129-30
- Corbin, D. A. 46
- Costs of goods sold 82-106
 current market prices 58
 effects of price-level changes 12-13, 17, 19
 in average current costs 86, 88, 93, 94-106
 methods of Philips Electrical Industries 226-33
see also Inventories

- Coughlan, J. W. 155, 164, 165*n*
 Coutts, W. B. 221*n*
 Creditors *see* Current liabilities
 Creole Petroleum Corporation, 222
 Current liabilities
 computation of profits and losses 158-61
 effects of price-level changes 13-14, 19, 135-40
 example of calculating profits and losses on 200
 index for calculating profits and losses on 155-8
 methods of Philips Electrical Industries 236-8
 realization of profits and losses on 153-5
 Current market prices 55-8
 advantages of accounting in 213-15
 American Accounting Association Committees 28
 American Institute of C.P.A.'s Accounting Research Study No. 6 26
 assets 64-6
 Institute of Cost and Works Accountants 29
 inventories 26, 64-6, 82-4
 methods of Philips Electrical Industries 36-7, 223-40
 non-current assets 26, 64-6, 109-10
 practical applications of accounting in 220-40
 Current replacement costs *see* Current market prices
- Davidson, S. 164*n*
 Debenture Holders *see* Long-term liabilities
 Debentures *see* Long-term liabilities
 Debtors *see* Monetary assets
 Depreciation 107-34
 accelerated 129, 213
 accounting entries recommended procedures 117-20
 effects of price-level changes 11-13, 16-17, 19, 82-3
 goodwill 130-3
 in average current costs 112-16
 intangible assets 130-3
 methods used by Philips Electrical Industries 233-6
 recommended procedures 115-20
 reinvestment of funds 122-9, 133-4
 retrospective adjustment to provision account 120-9, 234-5
 see also Non-current assets
- Digby, W. H. M. 217
 Diversification 49, 128
 Dividends, size of, when price-levels change 54-5, 74, 151, 209-10, 215
 duPont, E. I., de Nemours & Co. 222
- Edwards, E. O. 48*n*, 57, 58*n*, 69*n*, 71*n*, 73, 79, 80, 100, 108*n*, 123*n*, 165, 173
 Edwards, R. S. 44, 50
 Entity concept 44-5, 141, 151
 Epps, M. I. 177
 Examples, illustrative of
 change-over procedures 184-6
 funds statements 194-7, 202-3
 recommended procedures 181-203
- Funds Statements 194-7, 202-3
- General Price Index 41-63, 66-81
 American Accounting Association's 1957 Revision 28
 concept of profit by Philips Electrical Industries 239
 profit concept 80-1, 192-4
 variations from 58-61
- Gilman, S. 130*n*
 Going Concern concept 46-8, 49
 Goodwill 26, 130-3

- Goudeket, A. 36, 128, 157, 216,
223, 224, 225, 233, 235, 236*n*,
237, 240
see also Philips Electrical Industries
- Graham, W. J. 14*n*, 43
- Grant, J. McB. 12, 33, 43, 94, 95*n*,
97, 98, 100, 123*n*, 211
- Greener, M. J. 46
- Gross National Product Implicit
Deflators 50
- Hendriksen, E. S. 13, 14*n*, 46, 55*n*,
57, 59, 60, 62, 69*n*, 74, 77,
80*n*, 150*n*, 154
- Herdrich, Boggs & Co. 218
- Historical Record Convention 9,
10, 12, 13, 14, 16, 19, 21
- Holding Company 167-8
- Holding gains and losses 66-81
examples 58-9, 192-4
holding losses specifically 74-5
monetary items 139-40
profit determination 41*n*
- Holmes, O. W. 44
- Holzer, H. P. 222*n*
- Illustrative examples
change-over procedures 184-6
funds statements 194-7, 202-3
recommended procedures 181,
203
- Imperial Chemical Industries Ltd.
222
- Imperial Tobacco Company of
Canada Ltd. 221
- Income *see* Profit
- Income determination *see* Profit
determination
- Indexes (price) *see* Price indexes
- Indiana Telephone Corporation 36,
218, 221
- Institute of Chartered Accountants
in Australia 21
- Institute of Chartered Accountants
in England and Wales
criticism 32, 242
- recommendations and statements
on price-level changes 10,
21-3
- similar to American Institute of
Certified Public Accountants
24, 33
- Institute of Chartered Accountants
of Scotland
statement on price-level changes
31-2
statement on price-level changes
and auditors 216-17
- Institute of Cost and Works Account-
tants 29-30, 121*n*
- Intangible assets 129-33
in American Institute of Certified
Public Accountants' A.R.S.
No. 3, 26
treatment by Philips Electrical In-
dustries 236
- Inter-period comparisons 204-6
- Inventories 82-106
American Accounting Associa-
tion's Committee on Concepts
and Standards, Inventory
Measurement 28, 66
American Institute of Certified
Public Accountants' A.R.S.
No. 3 26
buying variances 57, 77-8
current market prices 55-8, 66
effects of price-level changes 14, 17
holding gains and losses 67, 70, 74
LIFO 103, 129, 213, 223
methods of Philips Electrical In-
dustries 226-33
perpetual inventory systems 84-8
physical counts 93-102
retail inventory systems 89-93
turnover of and price-level changes
82-4
valuing at net selling prices 75-7
see also Costs of goods sold
- Investments 161-8
private companies 166-8
unlisted 166-8
- Iowa-Illinois Gas and Electric Co.
221

- Jones, R. C. 28, 35, 141, 151*n*, 221
- Kerfoot, E. W. 232, 234, 238-9
- Kerr, J. St. G. 42, 47
- Keynes, Lord 63
- Kollaritsch, F. P. 222*n*
- Ladd, D. R. 56, 65, 133
- Land and Buildings *see* Non-current assets
- Latham, Lord 30
- Legal considerations
 accounting for price-level changes 35
 Companies Acts in Australia 217
- Li, D. H. 209*n*
- Liabilities
 current *see* Current liabilities
 long-term *see* Long-term liabilities
- LIFO 103, 129, 213, 223
- Littleton, A. C. 4, 9*n*, 10*n*, 77*n*
- Long-term liabilities, 17-18, 140-51
- Lucas, Joseph, (Industries), Ltd. 221
- MacNeal, K. 164
- Mason, P. 14, 28, 35, 82, 107, 136, 155, 157, 194
- Matching process 38-41
 in average current costs 86, 171
 in current costs 48
 net realizable values 66
 see also Profit determination
- Mathews, R. 12, 33, 43, 83, 94, 95*n*, 97, 98, 100, 123*n*, 195*n*, 211
- May, G. O. 62, 158
- Mey, A. 121*n*
- Monetary assets
 computation of profits and losses 158-61
 effects of price-level changes 13-14, 19, 135-40
 example of calculating profits and losses on 200
 index for calculating profits and losses on 155-8
 investments 161-8
 methods of Philips Electrical Industries 236-8
 realization of profits and losses on 153-5
- Monetary convention 9
- Monetary items *see* Monetary assets; *and* Current liabilities
- Montecantini Mining and Chemical Co. 223
- Moonitz, M. 25*n*, 46*n*, 58*n*, 62*n*, 68*n*, 75*n*, 78*n*, 79, 212*n*
 see also American Institute of Certified Public Accountants' A.R.S. Nos. 1 and 3
- Most, K. S. 121*n*
- Mutton, A. R. 36, 43, 190
- Nelson, C. L. 212*n*
- Netherlands Institute of Accountants 218-19
- Nichols, W. E. 97*n*, 113-14, 171-2
- Nippon Telegraph & Telephone Public Corporation 223
- Non-current assets 107-34
 accounting entries, recommended procedures 117-20
 American Accounting Association's Committee on Concepts and Standards, Long-lived Assets 28
 American Institute of Certified Public Accountants' A.R.S. No. 3 26
 current market prices 55-8, 64-6
 effects of price-level changes 14, 16, 18
 goodwill 130-3
 holding gains and losses 68, 71-4
 intangible assets 130-3
 methods used by Philips Electrical Industries 233-6
 plant registers 111-12
 recommended procedures 115-20
 see also Depreciation

- Objectives of accounting 44-8, 53-5, 141
- Objectivity 10, 61-3, 165-6
- Obsolescence 109, 111
- Ordinary shareholders 208-10
see also Shareholders
- Organization costs 129-30
- Paish, F. W. 50, 51
- Parker, W. E. 36
- Patents 129-30
- Paton, W. A. 4, 9*n*, 10*n*, 13, 77*n*, 155
- Paton, W. A. Jnr. 137
- Perpetual inventory systems 84-8
- Philco *see* Philips Electrical Companies
- Philips Electrical Industries 36, 223-40, 243
comparisons with previous periods 205-6
costs of goods sold 226-33
depreciation 128, 233-6
intangible assets 236
inventories 226-33
monetary items 157, 236-8
non-current assets 128, 233-6
statement by auditors 217
technology factors 75, 229-33
use of specific indexes 43, 56, 225
see also Goudekot, A.
- N.V. Philips' Gloeilampenfabrieken
see Philips Electrical Industries
- Physical stock counts 93-102
- Plant and equipment *see* Non-current assets
- Plant registers 111-12
- Practical applications of accounting in current costs 220-40
- Preference shareholders 152
see also Shareholders
- Prepayments *see* Monetary assets
- Prest, A. R. 136
- Price indexes 41-63, 66-81
consumer, Australian 6
consumer, use of 52-5, 59
consumer, various countries 8
for calculating profits and losses on monetary items 155-8
general investment purchasing power 59
Gross National Product Implicit Deflators 50
objectivity of 61-3
retail, Australian 7
stock exchange 163-8
wholesale, Australian 7
see also General price indexes; and Specific price indexes
- Pricing 213
- Procedures for change-over 184-6
- Professional accounting bodies
criticism 242
recommendations and statements on price-level changes 21-32
- Profit and Loss Account
adjustments are needed 19, 44
conventional concept of 10
illustrative example 179-82
in average for period prices or end of period prices 171-80
some proposals 34
when price levels change 14-15, 31
see also Costs of goods sold; and Depreciation; and Monetary items; and Profit determination
- Profit and Loss Appropriation Account
holding gains and losses 81
retrospective adjustment for depreciation 121-2
some proposals 33-4
- Profit determination 38-63
accelerated depreciation 129
amortizing intangible assets 130-2
by Philips Electrical Industries 224-40
costs of goods sold 82-106
definitions 69
depreciation 109, 112-13, 115, 122
economists' concept 38, 41*n*

- Profit determination—*cont.***
 effects of price-level changes 10–12, 16–20
 from speculating 78–9, 161–70
 general index concept of profit 80–1, 192–4
 holding gains and losses 66–81
 in average for year or end of year prices 171–80
 in illustrative example 187–8
 matching process 38–41
 profits and losses on monetary items 135–61
 some proposals 34
 statements and recommendations of American Institute of Certified Public Accountants 23–7
 with inventories at net selling prices 75–7
see also Costs of goods sold; *and* Depreciation; *and* Matching process; *and* Monetary items; *and* Profit and Loss Account
Proposals, some types advocated 33–7
Provisions for dividends 161
Provisions for taxation 161
Public relations of companies 214
- Queenan, J. W.** 24*n*
- Realization**
 profits and losses holding investments 163–6
 profits and losses holding monetary items 153–5
 profits and losses holding speculative commodities 170
- Recommendations and statements of professional bodies** 21–32
Reece Corporation 18–19, 221
Replacement costs, current *see* Current market prices
- Reserves**
 accounts used by Philips Electrical Industries 225–6, 234
 computation of, in illustrative example 191–2
 from creating profits and losses on monetary items 139, 142–8, 170, 206–8
 for general index concept of profit 81
 inventories revaluation 74, 85, 87, 88, 92–3, 96–8, 102–3, 104–5, 206–8
 methods used by Philips Electrical Industries 235–7
 non-monetary asset revaluation, 68, 74, 113–14, 117–21, 130, 206–8
 terminology 206–8
- Retail firms**
 perpetual inventory systems 84–6
 physical inventory counts 93–102
 retail inventory systems 89–93
- Retail inventory systems** 89–93
Retail Price Index, Australian 7
Retrospective adjustment depreciation provision account 120–9, 234–5
- Return on capital**
 E. I. du Pont de Nemours & Co. 222
 effects of price-level changes 18, 20, 30–1, 71–2, 107, 190, 213
 holding gains and losses 73
 Philips Electrical Industries 205–6
 recommended procedures 180
- Revenue statement** *see* Profit and Loss Account
- Reynolds, P. D.** 222*n*
Riverin, A. 11*n*, 12*n*, 44, 52
Royal Commission on the Taxation of Profits and Income 50, 51*n*
- Sacramento Municipal Utility District** 221
Salgado, I. P. 222*n*
Sands, J. E. 41*n*
Schonfeld, H. M. 222*n*
Selfridges Ltd. 222

- Shareholders**
 and long-term liabilities 140-2,
 149-51
 funds statements for 194-5
 in private companies 166-8
 interests of, versus the firm 44-8,
 53-5, 68-71, 81, 140-2, 149-51
 of Philips Electrical Industries
 224-5, 233, 237, 238-9
 ordinary shareholders 208-10
 preference shareholders 152
Shareholders funds *see* Share-
 holders
Shares, bonus 208
 in private companies 166-8
 unlisted 166-8
Simca 223
Smyth, E. B. 9*n*, 10*n*
Solomons, D. 11*n*, 12, 107, 124*n*,
 126*n*
Spacek, L. 132*n*
Specific price indexes 41-63, 66-81
 American Accounting Associa-
 tion's "1957 Revision" 28
 arguments against use of 48
 for converting sales figures 178-9
 for fixed assets 109-10
 for profits and losses on monetary
 items 155-8
 how specific? 55-8
 used by Philips Electrical Indus-
 tries 225, 226, 233, 239
 variations from 58-61
Speculating
 in commodities 78-9, 168-70
 in shares and stocks and deben-
 tures 161-3
Sprouse, R. T. 25*n*, 58*n*, 68*n*, 75*n*,
 78*n*, 79, 141*n*, 166, 241
see also American Institute of
 Certified Public Accountants'
 A.R.S. No. 3
Standard costs
 buying variances 57, 77
 methods used by Philips Electrical
 Industries 226-32
 when prices change 88
Statistics, price-level 5-8
Stock dividends 208
Stock exchange index 163-8
Stock, trading *see* Inventories
Stocks, investments 161-8
Stockholders *see* Shareholders
Study Group on Business Income
 23, 25
Summers, John, & Sons Ltd. 221
Sundry creditors *see* Current lia-
 bilities
Sundry debtors *see* Monetary assets
Supplementary financial statements
 Accounting Principles Board state-
 ment 26
 American Accounting Associa-
 tion's statements 27-8
 American Institute of Certified
 Public Accountants' A.R.S.
 No. 6 35, 44
 Institute of Chartered Account-
 nants of Scotland statement
 31
 practical applications 221
 types of proposals 34-6, 37
Sweeney, H. W. 2
Taxation
 cost of sales for taxation purposes
 85*n*
 depreciation for taxation purposes
 117*n*
 effects of price-level changes 210-
 13, 216
 equitable 214
 provision for taxation as a mone-
 tary item 161
Technology factors
 effects of 74-5
 methods used by Philips Electrical
 Industries 229-33
Tierney, C. 80*n*
Tokyo Shibaura Electric Co. Ltd.
 223
Unilever Ltd. 222
Unsecured notes *see* Long-term
 liabilities

- Wage rate changes 87-8
Walsh, F. J. 218-19, 220, 222*n*
Wholesale firms
 perpetual inventory systems 84-6
 physical inventory counts 93-102
 retail inventory systems 89-93
Wholesale price index, Australian 7
Wilk, L. A. 34, 43, 48, 50, 140, 152
Wright, F. K. 100, 129*n*
Yawata Iron and Steel Co. Ltd. 223
Yorston, R. K. 9*n*, 10*n*
Zeff, S. A. 70