chapter
20

Current cost accounting

overview

The rejection of Current Purchasing Power (CPP) accounting by the Sandilands Report in 1975 led to the development of a system of Current Cost Accounting (CCA). In this chapter, we look first at the theoretical roots of such a system, namely:

- The distinction between holding and operating gains – Edwards and Bell.
- The concept of deprival value – Bonbright and Baxter.

We then explore the basic elements of CCA, discussing the valuation of assets in a current cost balance sheet and the capital maintenance concept to be used in the measurement of current cost profit. There are two basic capital maintenance concepts to choose from:

- Operating capital maintenance.
- Financial capital maintenance.

We explain the following four adjustments that were developed to measure profit on the basis of operating capital maintenance:

- Cost of sales adjustment (COSA).
- Depreciation adjustment.
- Monetary working capital adjustment (MWCA).
- Gearing adjustment.

We also explain how the financial capital maintenance concept can be applied using money capital or real capital, that is inflation-adjusted capital, as the benchmark.

Introduction

With the rejection of Current Purchasing Power (CPP) accounting by the Sandilands Report in 1975, the ASC turned its attention to the development of the very different system of accounting, Current Cost Accounting (CCA), recommended in that report. The Sandilands Committee envisaged that current cost accounts would replace historical cost accounts but this proved politically unacceptable and SSAP 16 *Current Cost Accounting* (1980) required listed and large unlisted companies to prepare current cost accounts as well as historical cost accounts or historical cost information.

While SSAP 16 was withdrawn in 1986, the attempts to develop a system of current cost accounting, both in the UK and in several other English-speaking countries, remains one of the more interesting experiments in the attempts to reform accounting. We describe the basic elements of the system in this chapter but start by discussing the two theoretical roots of CCA identified in Figure 19.1, the contributions made by Edwards and Bell and by Bonbright.

We discuss first the ideas of Edwards and Bell, whose seminal work *The Theory and Measurement of Business Income*[1] was published in 1961. This book represented a major advance in the development of current value accounting and its particular contribution to the CCA model was the recognition of the distinction between holding gains and operating gains; we will concentrate on this aspect of their work.

Theoretical roots

The distinction between holding and operating gains

For the purposes of determining business profit[2] Edwards and Bell divided the activities of a company into holding intervals and sales moments – the latter being assumed to be instantaneous (see Figure 20.1). A sales moment is the instant in time when the company sells goods while a holding interval is the interval between successive sales moments.

Suppose that a company starts an accounting period with assets with a replacement cost of £40, and that at the end of the first holding period its assets have a replacement cost of £60. These are not necessarily the same assets, as the company might well have exchanged assets during the period. Thus a manufacturing company might have reduced its cash and increased its holding of raw materials, work-in-progress and finished goods. Since, by definition, the company has made no sales during the holding interval, the change in the value of the assets must be due to an increase in the replacement cost of assets owned by the company.

Immediately after the first sales moment, the replacement cost of the company's assets equals £90. These assets will consist of the receipts from sales plus those of the company's assets that were not sold. The total business profit so far (assuming that no capital has been introduced or withdrawn) is £50: the difference between the replacement cost of the assets immediately after the first sales moment and the equivalent value at the start of the accounting period.

The total business profit of £50 can be divided into two elements. Part of the profit, £20, is due to the increase in the replacement cost of the assets during the holding period. This, Edwards and Bell called the realisable cost saving, although other terms used to describe it are holding gain and revaluation surplus. We will use the term holding gain. The replacement cost of assets at the moment of the first sale was £60, but as they were acquired with assets which had a current cost of £40, the company has gained, or saved, £20 by virtue of acquiring or manufacturing the goods sold in advance of the date of sale.

The remainder of the business profit, £30, is termed the *current operating profit*. This is the difference between the replacement cost of the assets before and after the sales moment. Now many of the company's assets will remain unchanged during the sales moment (i.e. will not be sold) and the current operating profit can be stated in terms of the assets that do change. Thus, the current operating profit can be said to be equal to the receipts from sales less the replacement cost of assets used up (or exchanged) in the sales moment.

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[1] E.O. Edwards and P.W. Bell, *The Theory and Measurement of Business Income*, University of California Press, Stanford, Calif., 1961.

[2] Edwards and Bell, *op. cit.,* used the phrase 'business profit' to refer to the profit measurement related to assets valued at current cost. As defined by Edwards and Bell, an asset's current cost is usually (but not always) the same as its replacement cost. For simplicity at this stage, we will assume that current cost is the same as replacement cost.

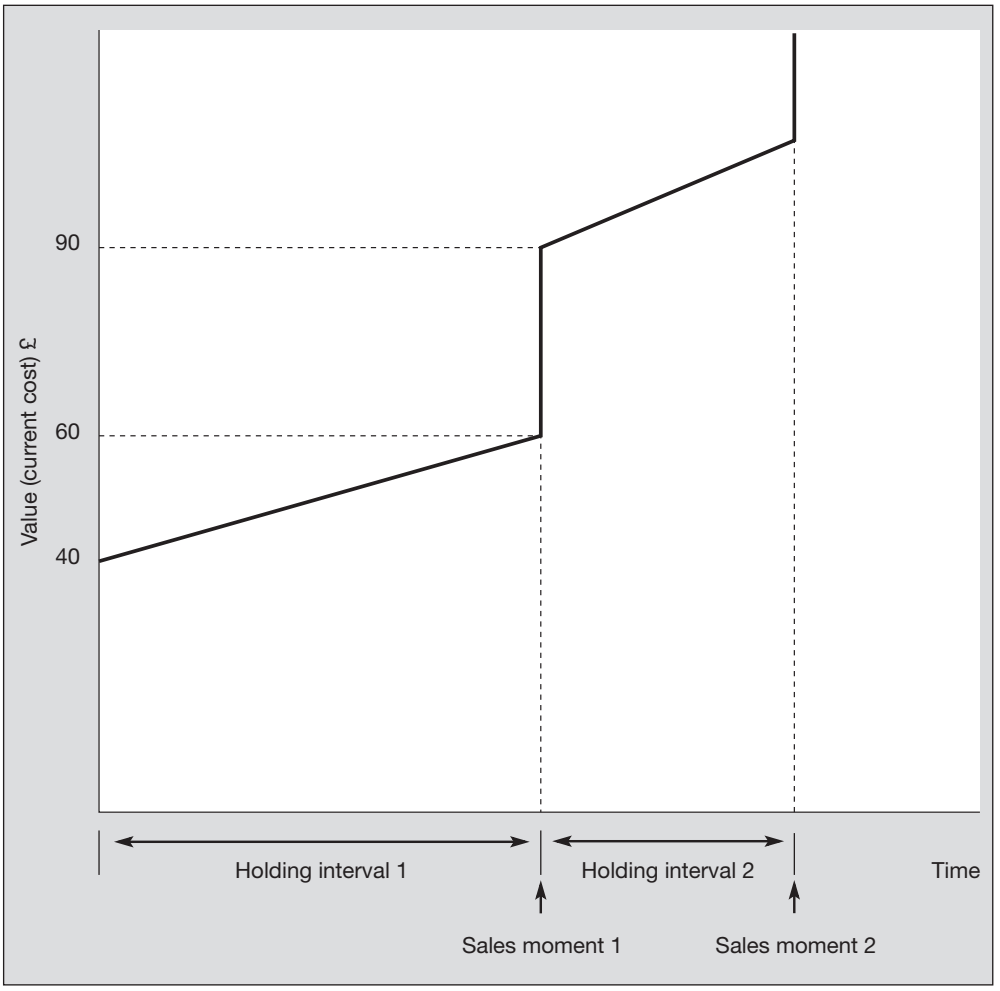

Figure 20.1 **Holding intervals and sales moments of a company**

The same approach can be used for each sales moment and, if we consider the accounting period as a whole, then, if it is assumed that no capital is introduced or withdrawn,

Business profit for period = Replacement cost of assets at end of period – Replacement cost of assets at beginning of period
= Sum of current operating profits for all sales moments + Sum of holding gains for all holding intervals.

The approach described above is illustrated in Example 20.1.

Example 20.1

Bow Limited started the year with the following assets:

	£
Stock, at replacement cost	600
Cash	400
	£1000

and finished the year with

	£
Stock, at replacement cost	900
Cash	500
	£1400

It will be assumed that the company has no operating expenses and that no capital was introduced or withdrawn. The total business profit is thus: £1400 – £1000 = £400.

The company's activities for the year were as follows:

				Stock £	*Cash* £
First holding interval	1 Jan	Opening balances		600	400
	17 Feb	Purchased stock for £200		200	(200)
		Stock had a RC of £900			
	31 Mar	at 31 March	HG	100	
				900	200
First sales moment	31 Mar	Stock with a RC of £300 sold for £450 (COP = £150)		(300)	450
				600	650
Second holding interval	1 Apr	Stock had a RC of £680 on 30 June	HG	80	
	30 Jun			680	650
Second sales moment	30 Jun	Stock with a RC of £280 sold for £300 (COP £20)		(280)	300
				400	950
Third holding interval	1 July 30 Sep	Purchased Stock for £450		450	(450)
		Stock had a RC of £900 at 31 Dec (the year end)	HG	50	
	31 Dec	Closing balances		£900	£500

where RC is the replacement cost, HG is the holding gain and COP is the current operating profit.

The total business profit of £400 can be analysed as follows:

	£	£
Current operating profits		
First sales moment £(450 – 300)	150	
Second sales moment £(300 – 280)	20	170
Holding gains		
First holding interval £(900 – 800)	100	
Second holding interval £(680 – 600)	80	
Third holding interval £(900 – 850)	50	230
Business profit		£400

We will discuss the problems involved in distinguishing between holding and operating gains later when we introduce the CCA model. However, it might be useful if we commented that a company's holding gains might be argued to give some indication of its success in the acquisition or manufacture of inputs, e.g. the extent to which it benefited by purchasing stock before a price increase. In contrast, the current operating profit might be said to provide information about the company's success as a seller of goods – the extent to which, because of its efficiency or position in the market, it can sell goods for a price that is greater than the current cost of replacing them.

The distinction between realised and unrealised holding gains

The total holding gain for a period may be split into two elements: the realised holding gain (RHG) and the unrealised holding gain (UHG). The RHG is that part of the total which is associated with the assets which have been used up or consumed in the period; that is, the RHG is the difference between the current value of the asset at the date at which it is consumed (e.g. the date of sale in the case of stock) and the historical cost of the asset. Conversely, the UHG arises from the increase in value of the assets which remain on hand at the end of the period and is equal to the difference between the current value of the assets at the end of the period and their historical cost or, in the case of assets owned at the beginning of the period, their value at that date.

The position is complicated slightly when we consider the consumption of assets that were owned at the beginning of the period because part of the RHG is effectively the realisation of part or the whole of the UHG of earlier periods.

Example 20.2 illustrates these points.

Example 20.2

Clive purchased 100 units of stock for £10 each on 1 December 20X7. No sales were made in December 20X7 and the RC of the units at 31 December 20X7 (Clive's year end) was £11 each.

Clive sold 60 units for £18 each on 30 June 20X8, at which date the RC of each unit was £13. No more sales were made in 19X8 but Clive purchased 20 units for £5 each on 10 October. The RC of stock on 31 December 20X8 was £16 per unit.

In 20X7 the only element of business profit is the UHG of £1 per unit or £100.

Now let us consider the year 20X8. Clive's assets at the start of the year, measured at RC, amounted to 100 units at £11 each or £1100. His assets at the end of the year were:

	£
Cash (60 × 18) – (20 × 15)	780
Stock 60 units at £16	960
	£1740

Clive's business profit for 20X8 was therefore £1740 – £1100 = £640. Clive's COP for the year is given by:

	£
Sales 60 × £18	1080
less RC of stock at the date of sale, 60 × £13	780
COP	£300

His RHG is given by:

	£
RC of stock at the date of sale	780
less Historical cost of stock, 60 × £10	600
RHG	£180

But of the above RHG of £180 a part represents the realisation of a portion of the 20X7 UHG, the amount involved being 60 × £1 = £60.

Clive's UHG in 20X8 is given by:

	£	£
RC at year end of closing stock of 60 units		960
less RC at 1 January of unsold closing stock held on 1 January, 40 × £11	440	
Historical cost of stock purchased in the year, 20 × £15	300	740
UHG		£220

The total business profit (BP) for the year is given by:

BP = COP + RHG + UHG – (that part of the RHG which was included in the UHG or previous years)

Substituting the monetary values, we have:

BP = £(300 + 180 + 220 – 60) = £640

The relationship between historical cost profit and business profit

The relationship can be easily seen if we resort to some simple algebra.

Let R be the revenue from sales, C be the current value of assets used up in generating sales, and H be the historical cost of those assets. Then the COP is given by $R - C$ while the RHG is equal to $C - H$.

The historical cost profit (HCP) is of course the difference between revenue and the historical cost of the assets consumed or, to use the above symbols:

$$\begin{aligned} \text{HCP} &= R - H \\ &= (R - C) + (C - H) \\ &= \text{COP} + \text{RHG}. \end{aligned}$$

In other words the historical cost profit is the sum of the current operating profit and the realised holding gains.

Let us now consider the implications of the above statement. The following discussion will serve as an introduction to the CCA model that will be developed later, as well as providing further evidence of the weaknesses of the historical cost accounting model.

It can be seen that historical cost profit has, when compared with business profit, two possible defects. First, historical cost profit combines two arguably distinct elements, COP and RHG, and the conventional accounting model makes no attempt to separate them. Second, the historical cost approach ignores UHG, i.e. it takes no account of the current value of the assets held at the end of the period.

The significance of these two observations depends on the view that is taken of the most suitable concept of capital for the purposes of profit determination. If the view is taken that the enterprise should be able to replace its assets as they are used up if it is to maintain its wealth or capital, i.e. the operating capital maintenance approach, then it might be argued that RHG should not be regarded as being part of the profit for the period.

Of course if one takes a different view of what constitutes 'well-offness' then it might be that RHG could be regarded as being part of profit. Such a view is implicit in the historical cost approach. However, it might still be argued that one of the defects of historical cost accounting is its failure to disentangle COP and RHG. This argument is based on the view that a company's COP and RHG are the result of different circumstances, and knowledge of the two elements might help the user of accounts to understand how the company obtained its historical cost profit. In particular, it might assist users to estimate future profits. For example, it might be that in a given year a company makes a very much greater profit than it had achieved in previous years because of the existence of RHGs. Those wishing to predict future profits would then no doubt consider the extent to which they believe that the opportunities to achieve RHGs will continue in the future.

To the extent that accounting practice in the UK and other countries allows companies to revalue assets for balance sheet purposes, UHGs are to be found in what are otherwise historical cost accounts. The recognition of UHGs in historical cost accounting has been partial, irregular (in the chronological and not moral sense) and has generally depended on the whim of the directors. Even after the issue of FRS 15 *Tangible Fixed Assets* (1998), directors will still enjoy considerable freedom as to which classes of assets are shown at current values.[3] Most adherents of current cost accounting would not wish to include UHGs as part of a company's profit. Even so, there is still a strong case for valuing assets at the current value, or in other words, systematically recognising UHGs. In CCA *all* UHGs on stocks and fixed assets are systematically recorded and reflected in the accounts.

The purpose of this section is to discuss the contribution of Edwards and Bell to the development of CCA. This can perhaps best be understood by noting that CCA makes a sharp distinction between current cost operating profit and holding gains.

[3] See Chapter 5.

It must, however, be noted that not all authorities agree that it is possible to make a clear and sharp distinction between operating profit and holding gains or that, even if it were possible, it would be desirable to do so. The distinction between operating and holding gains is clear in those cases when stock is replaced by more or less identical items. However, many traders do not act in this way but instead are prepared to switch from one line to another if they sense the opportunity of making greater profits. A trader might, for example, start the period with a warehouse full of carpets but use the cash flow generated from their sale to purchase refrigerators. In such a case it might be argued that it would not be realistic to include in the calculation of the trader's operating profit the replacement cost of carpets that the trader does not intend to replace. The designers of CCA systems have been forced to include special provisions to deal with such cases.

Some would go further and argue that even if stock is to be replaced, the distinction between holding and operating gains is artificial. Such advocates would say that the decision to carry on a business of necessity involves holding stock and hence most price changes in the stock holding period are just as much a part of the operations of the firm as the differences between current revenue and the current cost of goods sold.[4]

Which 'current value'?

In Chapter 4 we pointed out that there are several ways of valuing an asset, each of which is of relevance in the determination of periodic accounting profit. In other words there is not one unique measure of profit but a whole set, depending on the basis of asset valuation employed and the capital maintenance concept selected.

Let us for a moment ignore the problems associated with the choice of the capital maintenance concept and accept the argument that the present value approach to asset valuation should be rejected for the theoretical and practical reasons outlined in Chapter 4. We are then – if we are to use current values – left with the choice between the replacement cost and net realisable value approaches.

Clearly both are of relevance and a strong case can be made for requiring companies, or at least larger companies, to publish multi-columnar accounts which show both the replacement costs and the net realisable values of their assets and, possibly, their historical costs. Thus, companies would be required to report profit on more than one basis. Against this, the view has been expressed that the approach would be too costly for the producers of accounts and too complicated for the users of accounts.

The cost argument is not wholly convincing because if assets are to be employed properly businesspeople will need to be aware of both the replacement cost and the net realisable values of their assets. In addition, as will be seen, knowledge of both is required for the variant of current cost accounting that was favoured by the ASC. The second line of argument can – at least in the authors' view – be dealt with almost as easily. If it can be shown that there are a number of ways of measuring profit, then it surely is confusing and misleading to imply that there is only one. Considerations of practicability must limit the number of different profit figures that are reported, but it does seem reasonable to suppose that users of accounts should be able to cope with and benefit from the publication of two or three views of a company's results.[5]

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[4] See D.F. Drake and N. Dopuch, 'On the case for dictomising income', *Journal of Accounting Research*, Autumn 1965, and P. Prakash and S. Sunder, 'The case against separation of current operation profit and holding gain', *The Accounting Review*, January 1979.

[5] This view would seem to be consistent with the ASB's support of the information set approach and their discouragement from focusing on one or two figures in the financial statements.

The foregoing argument was not accepted by those charged with the task of reforming accounting practice except in the period when it was advocated that both current cost and historical cost accounts should be published. Conventional wisdom decreed that one set of current value accounts was enough. The question of which asset valuation method should be adopted was therefore central to the current value accounting debate.

The net realisable value (NRV) approach possesses a number of virtues. The total of the net realisable values of a company's assets does provide some measure of the risks involved in lending to or investing in the company, in that the total indicates the amount that would be available for distribution to creditors and shareholders should the business be wound up. This point is, of course, dependent on the problems associated with the determination of net realisable values which were discussed in Chapter 4, and in particular the assumptions that are made about the circumstances surrounding the disposal of the assets. It has also been argued, notably by Professor R.J. Chambers, that the profit derived from a variant of the net realisable value asset valuation basis,[6] shows, after adjusting for changes in the general price level, the extent to which the potential purchasing power of the owners of an enterprise has increased over the period. However, the potential would only be realised if all the assets were sold, and it must be noted that in reality companies do not sell off all their assets at frequent intervals.

Advocates of net realisable value were, originally, mostly to be found in academia but, in the 1980s, support for this view emerged from a professional accountancy body in the form of a discussion document issued by the Research Committee of the Institute of Chartered Accountants of Scotland.[7] The model advocated by the committee and their arguments in favour of the net realisable value approach will be discussed in a little more detail in Chapter 21.

The general view of the supporters of CCA is that, in practice, companies continue in the same line or lines of business for a considerable time, making only marginal changes to the mix of their activities. It is therefore argued that if only one current value profit is to be published then it should be based on the replacement cost approach. For if it is assumed that a company is going to continue in the same line of business then it should only be regarded as maintaining its 'well-offness' if it has generated sufficient revenue to replace the assets used up. Thus, replacement cost was the preferred choice of those groups in the UK and most overseas countries that recommended the introduction of CCA. A strict adherence to the use of replacement cost, however, would not allow accounts to reflect the fact that companies do change their activities or the manner in which they conduct their present activities and that all the assets owned at any one time would not necessarily be replaced. Thus, some modification of the replacement cost approach is required.

Deprival value/Value to the business

A suitable basis of asset valuation, which would lead to the use of replacement cost in those circumstances where the owner would – if deprived of the asset – replace it and the use of a lower figure if the asset was not worth replacement, was suggested by Professor J.C. Bonbright in 1937. Professor Bonbright wrote, 'The value of a property to its owner is identical in amount with the adverse value of the entire loss, direct and indirect, that the owner might expect to suffer if he were deprived of the property'.[8] We have already introduced this approach in Chapter 5.

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[6] A method known as Continuously Contemporary Accounting (CoCoA).
[7] *Making Corporate Reports Valuable*, Kogan Page, London, 1988.
[8] J.C. Bonbright, *The Valuation of Property*, Michie, Charlottesville, Va., 1937 (reprinted 1965).

Professor Bonbright's main concern was with the question of the legal damages which should be awarded for the loss of assets. He was not concerned with the impact of asset valuation on the determination of accounting profit. Others, notably Professor W.T. Baxter in the UK, recognised the relevance of this approach to accounting and developed the concept in the context of profit measurement. Professor Baxter coined the term 'deprival value', which neatly encapsulates the main point that the value of an asset is the sum of money that the owner would need to receive in order to be fully compensated if deprived of the asset. It must be emphasised that the exercise is of a hypothetical nature; the owner need not be physically dispossessed of the asset in order for its deprival value to be determined. This approach was proposed in the Sandilands Report and, renamed 'Value to the Business' or 'Current Cost', it became the asset valuation basis of CCA. Thus, in a current cost balance sheet, assets would be shown at their deprival value, while a current cost profit and loss account would show the current operating profit, determined as the difference between the revenue recognised in the period and the deprival values of the assets consumed in the generation of revenue.

As we have seen earlier the ASB had, for many years, accepted the view that the value-to-the-business model provides the most appropriate way of measuring the current value of an asset but that more recently, as a result of its desire to achieve greater international agreement, it has adopted a slightly different fair value approach (see, for example, Chapter 5).

Before turning to a discussion of CCA, it might be helpful if we explored the meaning of deprival value in a little more detail. Ignoring non-pecuniary factors, the deprival value of an asset cannot exceed its replacement cost, for the owner deprived of an asset could restore the original position through the replacement of the asset. The owner might of course incur additional costs (e.g. a loss of potential profit) if there was any delay in replacement – the indirect costs referred to in Professor Bonbright's original definition. There may be circumstances where these additional costs may be so substantial that they will need to be included in the determination of the replacement cost, but generally these additional factors are ignored.

The owner might not feel that the asset was worth replacing, in which case the use of the asset's replacement cost would overstate its deprival value. Suppose that a trader owns 60 widgets, the current replacement cost of which is £3 per unit. Let us also assume that the trader's position in the market has changed since acquiring the widgets, that it will only be possible to sell them for £2 each, and that this estimate can be made with certainty. The trader's other assets consist of cash of £100.

The trader's wealth before the hypothetical loss of the widgets is £220 (actual cash of £100 plus the certain receipt of £120). Let us now assume that the trader is deprived of the widgets. It is clear that the trader would only need to receive £120 in compensation, i.e. the net realisable value of the widgets, to restore the original position. The trader, if paid £180 (the replacement cost), would end up better off.

In order for an asset's deprival value to be given by its net realisable value, the net realisable value must be less than its replacement cost. Otherwise a rational owner (and in this analysis it is assumed that owners are rational) would consider it worthwhile replacing the asset.

We must now consider a different set of circumstances under which the owner would not replace the asset but has no intention of selling it. The asset may be a fixed asset that is obsolete in the sense that it would not be worth acquiring in the present circumstances of the business. The asset is still of some benefit to the business and it is thought that this benefit exceeds the amount that would be obtained from its immediate sale, i.e. its net realisable value. This benefit will, at this stage, be referred to as the asset's 'value in use'.

An example of this type of asset might be a machine that is used as a standby for when other machines break down. The probability of breakdowns may be such that it would not

be worth purchasing a machine to provide cover because the replacement cost is greater than the benefit of owning a spare machine. It must be emphasised that the relevant replacement cost in this analysis is the cost of replacing the machine in its present condition and not the cost of a new machine. The machine may have a low net realisable value (which may be negative if there are costs associated with the removal of the machine) which is less than its value in use. In such circumstances an asset's deprival value will be given by its value in use, which would be less than its replacement cost but greater than its net realisable value.

As will be seen, the determination of an asset's value in use often proves to be a difficult task. In certain circumstances it may be possible to identify the cash flows that will accrue to the owner by virtue of ownership of the asset and thus, given that an appropriate discount rate can be selected, its present value can be found. In other instances the amount recoverable from further use may have to be estimated on a more subjective basis. However, this estimate will approximate to the asset's present value and hence we will, at this stage, use the term present value (PV) for simplicity.

The above discussion is summarised in Figure 20.2.

In the case of a fixed asset, the replacement cost is the lowest cost of replacing the services rendered by that asset rather than the cost of the physical asset itself. The replacement cost of stock will depend on the normal pattern of purchases by the business and thus it will be assumed that the usual discount for bulk purchases will be available.

The net realisable value of work-in-progress that would, in the normal course of business, require further processing before it is sold needs careful interpretation. The conventional definition of net realisable value in relation to stock is the 'actual or estimated selling price (net of trade but before settlement discounts) less (a) all further costs to completion and (b) all costs to be incurred in marketing, selling and distributing'.[9] There is an alternative definition that is the amount that would be realised if the asset were sold in its *existing* condition less the cost of disposal. For the purposes of determining the asset's deprival value, the higher of the two possible net realisable values will be taken.

Assume that a business holds an item of work-in-progress which could be sold for £200 in its existing condition, but which could, after further processing costing £30, be sold for £250.

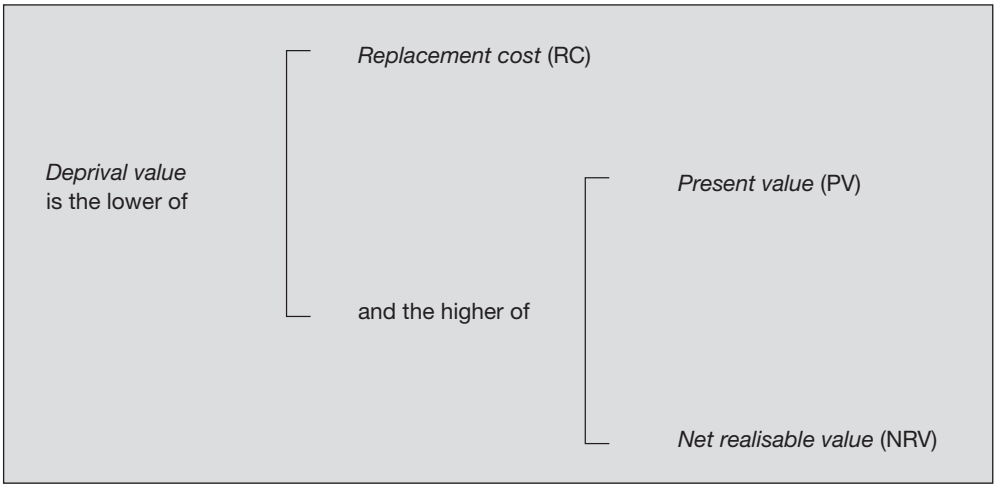

Figure 20.2 A definition of deprival value

[9] SSAP 9 *Stocks and Long-term Contracts*, revised September 1988.

Also assume that its replacement cost is £350 and thus its replacement cost does not yield its deprival value.

In this case the asset's deprival value is £220 so long as the period required to complete and market the stock is brief enough for us to be able to ignore the effect of discounting. It is clear that, before the hypothetical deprival of the asset, the business would expect to receive £220 from its sale after taking account of the additional processing costs. If, on the other hand, the increase in the sales proceeds that would be expected if the asset were processed was less than the additional manufacturing costs, a rational owner would sell the asset in its existing condition and the net sales proceeds under these circumstances would give its deprival value.

In the context of Figure 20.2, six different situations can be envisaged:

1 RC < NRV < PV; then the deprival value is given by the RC. In this case the asset's RC is less than both its NRV and PV. It is worth replacing and because its PV is greater than its NRV it is likely that the asset involved is a fixed asset that will be retained for use within the company.

2 RC < PV < NRV; then the deprival value is given by the RC. As (1) except that as the asset's NRV exceeds its PV the asset will be sold and is probably part of the trading stock of the business.

3 PV < RC < NRV; then the deprival value is given by the RC. The asset would be replaced and then sold. It is almost certain to be part of the trading stock.

4 NRV < RC < PV; then the deprival value is given by the RC. This is likely to be a fixed asset. It is worth replacing since its PV is greater than its RC.

5 NRV < PV < RC; then the deprival value is given by the PV. This asset is not worth replacing, but given that it is owned it will be retained since its PV is greater than its NRV. This is likely to be a fixed asset that would not now be worth purchasing but is worth retaining because of its comparatively low NRV.

6 PV < NRV < RC; then the deprival value is given by the NRV. This is the second case where the asset's value to the business is not its RC. The asset is not worth replacing nor is there any point in keeping it. It is obviously an asset that should be sold immediately. It might be an obsolete fixed asset whose scrap value is now greater than the benefit that would be obtained from its retention. Alternatively, the asset might be an item of trading stock in respect of which there has been a change in the business's place in the market, i.e. it can no longer acquire or manufacture the stock for an amount which is less than its selling price net of expenses.

It is clear that the deprival value of a fixed asset can only be given by its replacement cost or present value. The deprival value of an asset is based on its net realisable value only when it would be in the interest of the business to dispose of the asset. Thus, following the conventional definition of a current asset – an asset which will be used up within a year of the balance sheet date or within the operating cycle of the business, whichever is the longer – an asset whose deprival value is given by the net realisable value should be classified as a current asset.

The trading stock of a business is, by definition, an asset which is held for sale and hence its deprival value will either be its replacement cost or its net realisable value but not its present value (although in the case of stock which will not be sold for a considerable time its net realisable value may itself be based on the present value of future cash flows).

The deprival value of other current assets may be any of the three possible figures. Consider, as an example, the case of an unexpired insurance premium. Its deprival value is the loss that would be suffered if the insurance company could no longer honour its obligations. If the business felt that it was worth replacing the asset and would take out a new policy to cover the risk, the asset's deprival value would be given by its replacement cost. But suppose that it was

believed that the cost of the new policy would outweigh the benefits that would be afforded by the policy. If the perceived benefits from the policy exceed the amount that could be obtained if the business surrendered the policy, the asset's deprival value would be its 'present value' (or value in use), which would be an amount which is less than the replacement cost but greater than its net realisable value (or the surrender value of the policy). It may be that the net realisable value exceeds the perceived benefit that would flow from the retention of the policy. In this instance, the deprival value of the asset is its net realisable value but, if this was indeed the case, the business should, in any event, surrender the policy.

The basic elements of current cost accounting

We are now in a position to introduce the basic elements of current cost accounting. In order to be able to concentrate on the principles involved we shall use very simple examples.

The current cost balance sheet

In a current cost balance sheet both assets and liabilities should in principle be shown at current cost, that is at deprival value or value to the business.

The current cost of short-term monetary assets will be the same as the amounts at which they appear in historical cost accounts. Hence, the assets that will appear at a different amount in a current cost balance sheet will be non-monetary assets, usually tangible fixed assets, investments and stocks.

In theory, liabilities should also be stated in terms of their 'current costs'. To do this we need to turn the definition of current cost around and ask how much the debtor would gain if he or she were released from the obligation to repay the debt. Clearly, all other things being equal, the longer the period before the debt is due, the less the gain from the extinction of the debt.

The 'current cost' or 'relief value' of a liability could be calculated by reference to its present value. Thus, if we ignore interest costs, the balance sheet figure for a debt of £100 000 repayable next month would be higher than a debt of the same nominal value repayable in ten years' time, the difference between the two figures depending on the discount rate.

In the early attempts to introduce CCA, liabilities continued to be recorded at their nominal values. However, there have been a number of developments in such areas as accounting for leases and retirement benefits, which are resulting in long-term liabilities being measured on the basis of their present values.

The total owners' equity in a current cost balance sheet is, as in a historical cost balance sheet, the difference between the assets and liabilities, but part of it will be treated as a reserve reflecting the amounts needed to be retained within the business to deal with the effect of changing prices. The size of the reserve, and its appropriate description, will depend on the selected capital maintenance concept (see Chapter 4).

The current cost profit and loss account

A current cost profit and loss account includes a number of items not found in one based on the historical cost convention. The actual number will depend on the chosen capital maintenance

concept, which may be 'operating capital maintenance' or 'financial capital maintenance'. We shall look at each in turn.

Operating capital maintenance

We will first examine a current cost profit and loss account based on the maintenance of operating capital. Operating capital may be defined in a number of ways, but it is usual to think of it as the productive capacity of the company's assets in terms of the volume of goods and services capable of being produced. Thus, from this standpoint, a company will only be deemed to have made a profit if its productive capacity at the end of a period is greater than it was at the start of the period after adjusting for dividends and capital introduced and withdrawn.

The most convenient way of measuring a company's operating capital is by using, as a proxy, its *net operating assets*. So, a company will only be deemed to have made a profit if it has maintained the level of its net operating assets. As we shall see later, it is difficult to reach agreement as to what constitutes net operating assets. At this stage we will regard net operating assets as a company's fixed assets, stock and all monetary assets less current liabilities.

As explained in Chapter 4, if the company is partly financed by creditors, the profit attributable to the equity holders is different from, and in periods of rising prices greater than, the entity profit (current cost operating profit) on the assumption that part of the additional funds needed to maintain the operating capital is provided by creditors.

There are four 'current cost adjustments' which might appear in a current cost profit and loss account and which may be regarded as 'converting' a historical cost profit into a current cost profit. The first three are the 'current cost operating adjustments' and the fourth is the gearing adjustment:

1 *Cost of sales adjustment* (COSA): This is the difference between the current cost of goods sold and the historical cost.
2 *Depreciation adjustment*: This is the difference between the depreciation charge for the year based on the current cost of the fixed assets and the charge based on their historical cost.
3 *Monetary working capital adjustment* (MWCA): Monetary working capital may be defined as cash plus debtors less current liabilities. In order to operate, most companies need to invest in monetary working capital as well as in fixed assets, thus they might need to hold a certain level of cash and sell on credit but will also be able to buy on credit. All other things being equal, an increase in prices will mean that a company will have to increase its investment in monetary working capital, and the purpose of the MWCA is to show the additional investment required to cope with price increases. Of course, some companies can operate with negative working capital, for example a supermarket chain which buys on credit but sells for cash. In such instances an increase in prices will result in a reduction in monetary working capital and the MWCA would then be a negative figure reflecting that reduction.
4 *The gearing adjustment*: The gearing adjustment is the link between the current cost operating profit and the current cost profit attributable to the equity shareholders. It depends on the assumption that part of the additional funds required to be invested in the business as a result of increased prices will be provided by long-term creditors.

These adjustments are illustrated below.

Since X Limited started trading all prices have remained constant; hence the balance sheet as at 1 January 20X2, shown below, satisfies both the historical cost and current cost conventions.

Balance Sheet as at 1 January 20X2

	£		£
Share capital and		Fixed assets	
reserves	4500	purchased 31 Dec 20XI	3600
Loan (interest free)	4500	Stock (200 units)	2000
		Debtors	2400
		Cash	1000
	£9000		£9000

X Limited buys for cash and sells on one month's credit.

The company incurs no overhead expenses.

The fixed asset is to be written off over three years on a straight-line basis.

The mark-up is constant at 20 per cent on historical cost determined using the first-in first-out method of stock valuation.

Stock is held constant at 200 units: the monthly sales are 200 units. The cost of stock at the end of the previous month was £10 per unit; the cost of purchases increased by 10 per cent at the beginning of the month. The replacement cost of the fixed asset increased by 50 per cent on that date. Thereafter all prices are held constant.

All profits are paid out by way of dividend at the end of each month.

We will first present the historical cost accounts for January 20X2:

Historical cost profit and loss account for the month of January 20X2

	£	£
Sales, 200 × £10 × 1.2		2400
less Opening stock	2000	
Purchases, 200 × £10 × 1.1	2200	
	4200	
Less Closing stock	2200	2000
		400
Less Depreciation 1/36 of £3600		100
Profit for month		300
less Dividend		£300

Historical cost balance sheet as at 31 January 20X2

	£	£
Fixed assets		3500
Stock		2200
Debtors		2400
Cash £(1000 + 2400 – 2200 – 300)*		900
		£9000
Share capital and reserves		4500
Loan (interest free)		4500
		£9000

* Opening balance plus cash collected from debtors less purchases less dividends.

We will now look at the four adjustments on the assumption that the current cost of the assets is given by their replacement cost.

Cost of sales adjustment (COSA)

	£
Replacement cost of the 200 units sold	
$200 \times £10 \times 1.1$	2200
Historical cost of goods sold	2000
COSA	£200

Depreciation adjustment

Depreciation charge for month based on the current cost of the fixed assets	
$1/36 \times £3600 \times 1.5$	150
Depreciation charge based on historical costs	100
Depreciation adjustment	£50

Note that in this simple introductory example we have assumed away the problem of the valuation of part-used assets, i.e. there is no prior or backlog depreciation.[10]

Monetary working capital adjustment (MWCA)

The company's opening monetary working capital consists of a cash balance of £1000, which represents half its monthly purchases (at the old prices) and debtors of £2400 (one month's sales). Hence, if it is assumed that for operational reasons the company will need to maintain the same relative position, an increase in the cost of purchases of 10 per cent will mean that the company's investment in working capital will also need to increase by 10 per cent.

Its opening monetary working capital was £3400;[11] hence the MWCA is 10 per cent of £3400 = £340.

The current cost operating profit and operating capability

Before turning to the gearing adjustment it is instructive to see what has happened so far. We started with a profit on the historical cost basis of £300 and have made three adjustments,

[10] Backlog depreciation represents the restatement of the depreciation charged in prior periods necessary to reflect the increase of the value of the asset that has occurred in the current period.

[11] Debtors include the profit on the sales. Strictly the profit element should be eliminated from the calculation of the MWCA as follows:

	£
Cost of stock with debtors	
$\frac{10}{12} \times £2400$	2000
Cash balance	1000
MWC	£3000
MWCA 10% of £3000	£300

We shall, however, ignore this complication.

the cumulative effect of which is:

	£	£
Historical cost profit		300
less COSA	200	
Depreciation adjustment	50	
MWCA	340	590
Current cost operating loss		£290

This example is based on the maintenance of operating capital, and the current cost operating loss of £290 can be related to the company's operating capacity as measured by its holding of net operating assets in the following way.

In order to be in the same position at the end of the month as it was at the beginning the company would need to:

(a) be able to replace that part of the fixed asset that has been consumed during the period (we will assume for the sake of the argument that the asset can be replaced in bits). At current prices it will need to set aside £150 to replace one-thirty-sixth of the asset (1/36 × £5400 = £150);
(b) hold stocks of £2200;
(c) carry debtors equal to one month's sales at the new price, £2640 (£2400 + 10% of £2400);
(d) hold a cash balance of £1100 (half the cost of one month's purchases).

We can now compare the required holding of assets with that which actually exists.

Required holding of assets

	£	£
Fixed assets		
remaining		3500
required for replacement		150
Stock		2200
Debtors		2640
Cash		1100
		9590
Assets available at the end of the month		
Fixed assets	3500	
Stock	2200	
Debtors	2400	
Cash	900	9000
Shortfall		590

The shortfall can be explained by two factors	£
Dividend paid	300
Current cost operating loss	290
	590

Thus, it appears that, if it is the company's intention to maintain its operating capital, it should not have paid the dividend, but even if the dividend had not been paid, the company's operating capital would have been reduced by £290.

Many advocates of CCA would say that the above line of argument is unduly prudent because it ignores the fact that part of the company is financed by long-term creditors. They would include a gearing adjustment of some kind.

The gearing adjustment

The purpose of the gearing adjustment is to show how much of the additional investment required to counter the effects of increased prices would be provided by longer-term creditors[12] on the assumption that the existing debt-to-equity ratio, in this example 1:1, will be maintained.

Unfortunately, the gearing adjustment is another example of a failure to agree on the most appropriate method and there are at least two ways of calculating the gearing adjustment. The most commonly used, the so-called restricted or partial gearing adjustment, was based on the assumption that the current cost profit attributable to shareholders should bear the burden of only that part of the cost of sales, depreciation and monetary working capital adjustments financed by the shareholders, in this case 50 per cent. Thus, the restricted gearing adjustment is a credit to current cost operating profit of 50 per cent of the total of the three adjustments, i.e.:

	£
COSA	200
Depreciation adjustment	50
MWCA	340
	£590

The gearing adjustment, 50% of £590 = £295.

Putting all this together, the current cost profit attributable to shareholders can be determined as follows:

	£	£
Historical cost profit		300
less COSA	200	
Depreciation adjustment	50	
MWCA	340	590
Current cost operating loss		290
Add Gearing adjustment		295
Current cost profit attributable to shareholders		£5

Thus, the company could pay a dividend of £5 and still maintain its operating capital so long as the long-term creditors provide (or will provide if asked at some stage in the future) £295.

Some argue that this gearing adjustment is unduly restrictive because it fails to take into account unrealised holding gains (UHG) that will be reflected in a current cost balance sheet and which will reduce the debt-to-equity ratio thus affording the opportunity for further borrowings. In this case the unrealised holding gain on the fixed asset is 50 per cent of 35/36ths of £3600 = £1750.

The alternative, the natural or full gearing adjustment, is based on the sum of the UHG and the current cost adjustments – in this case 50 per cent of (£590 + £1750) = £1170, and thus the current cost profit attributable to shareholders becomes £880.

The use of the full gearing adjustment is based on the assumption that creditors would be prepared to lend the company an additional £1170 that would maintain the existing debt-to-equity ratio.

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[12] Short-term creditors, such as trade creditors, have been ignored in this example. In practice, short-term creditors were included in monetary working capital.

The current cost accounts

The current cost profit and loss account for January, using the restricted gearing adjustment, can be presented as follows:

Current cost profit and loss account for the month of January 20X2

	£	£
Sales		2400
Cost of goods sold:		
Historical cost	2000	
COSA	200	2200
		200
Depreciation:		
Historical cost	100	
Depreciation adjustment	50	150
		50
MWCA		340
Current cost operating loss		290
Gearing adjustment (restricted)		295
Current cost profit attributable to shareholders		5
Dividend, assumed equal to Profit		£5

A distinction can be made between the three current cost operating adjustments. One, the depreciation adjustment, represents the restated value of the cost of an asset consumed during the period and will thus be credited to the provision for depreciation. The other adjustments relate to the additional investments required to maintain operating capability and will be credited to a *current cost reserve account.*

Another adjustment is required in the balance sheet in respect of the fixed asset. At the beginning of the month the fixed asset's current cost (equal in this instance to its historical cost) was £3600. This increased by 50 per cent to £5400 on the first day of the month. However, the decision to depreciate the asset on a straight-line basis assumes that one-thirty-sixth of the asset is used up in the month and hence 1/36 of the total gain of £1800, £50, is realised and the balance unrealised.

The total gain of £1800 is debited to the fixed asset account and credited to the current cost reserve account.

The gearing adjustment is debited to the current cost reserve account.

The current cost balance sheet as at 31 January 20X2 is therefore:

	£	£
Fixed assets at current cost	5400	
less Provision for depreciation	150	5250
Stock		2200
Debtors		2400
Cash (assuming a dividend of £5)*		1195
		£11045

	£	£
Share capital and reserves		4 500
Current cost reserve account (see below)		2 045
		6 545
Loan (interest free)		4 500
		£11 045
Current cost reserve		
Gain on fixed assets		1 800
COSA		200
MWCA		340
		2 340
less Gearing adjustment		295
		£2 045

*1000 + 2400 – 2200 – 5 = £1195

If we had used the full gearing adjustment, £1170, the current cost profit attributable to shareholders, and in this case the dividend, would be £880, thus reducing the assets to £10 170 and the current cost reserve to £1170. These figures illustrate the argument in favour of the full gearing adjustment because if the creditors did increase their loan by the amount of this gearing adjustment, £1170, the original debt-to-equity ratio of 1 : 1 would be maintained. The introduction of funds equal to the restricted gearing adjustment would not have the same effect because of the failure to recognise the unrealised holding gain.

The consequences of using the different approaches are illustrated in the following summary balance sheets that assume that additional borrowings, equal to the appropriate gearing adjustment, are obtained.

	Restricted gearing adjustment		*Full gearing adjustment*	
	£	£	£	£
Sundry assets		9 850		9 850
Cash		1 195		320
		11 045		10 170
Additional cash generated by fresh borrowings		295		1 170
		£11 340		£11 340
Share capital and reserves		4 500		4 500
Current cost reserve account		2 045		1 170
		6 545		5 670
Original loan	4 500		4 500	
Additional loan	295	4 795	1 170	5 670
		£11 340		£11 340
Debt-to-equity ratio		1 : 1.36		1 : 1

Financial capital maintenance

We will now consider current cost accounts in which profit is measured on the basis of financial capital maintenance. The focus here is on the shareholders and whether their interest in the

company has increased or not. There are two versions of financial capital maintenance, one based on monetary units and the second based upon purchasing power units. While the former ignores inflation, the latter takes into account inflation, as measured, say, by the RPI, and hence attempts to show whether or not the interest of the shareholders in the company has increased in 'real' terms. For the remainder of this chapter, we shall confine ourselves to this real terms version of financial capital maintenance.

If it is assumed that no capital is introduced or withdrawn during the period, the 'real terms' profit can be found as follows:

(a) Measure the shareholders' funds at the beginning of the period based on the current cost of assets.
(b) Restate that amount in terms of pounds of purchasing power at the balance sheet date by use of a relevant index of general prices (such as the RPI).
(c) Compare the restated amount from (b) with the shareholders' funds at the end of the year, based on the current cost of assets. If shareholders' funds at the end of the period exceed the restated figure for the beginning of the period, a 'profit' has been made.

Using our earlier illustration and assuming that on average prices increased by 20 per cent over one month and that no dividends were paid, we can calculate the total real gain as follows:

(a) Shareholders' funds based on current costs as at 1 January 20X2, £4500.
(b) If prices increased on average by 20 per cent over the month, shareholders' funds would need to amount to £5400 (£4500 × 1.20) if real financial capital is to be maintained.
(c) **Calculation of total real gain**

	£
Shareholders' funds at 31 January 20X2	
at current cost	
Fixed assets	5250
Stock	2200
Debtors	2400
Cash (before dividend)	1200
	11050
less Loan	4500
Funds at 31 January 20X2	6550
Funds at 1 January 20X2, restated in terms of	
31 January 20X2 purchasing power	5400
Total real gains for January	£1150

The above calculation gives no indication of how the gain was achieved. There are many ways of presenting a profit and loss account based on the maintenance of financial capital. One simple version based on our illustration is given below.

It starts in a similar fashion to the profit and loss account based on the maintenance of operating capital, in that it shows a current cost operating profit but without the inclusion of the monetary working capital adjustment which, along with the gearing adjustment, is inconsistent with the approach taken to monetary items in a system which does not seek to indicate the additional finance required to sustain a given level of net operating assets.

To the modified current cost operating profit are added the holding gains, distinguished between realised and unrealised. The cost of sales and depreciation adjustments are realised holding gains, which means that they are debited in the first part of the statement but are added back, or credited, in the second section.

The sum of the modified current cost operating profit and the total holding gains is described as the 'total gains'.

Finally, the 'inflation adjustment' is deducted from the total gains to give the total real gains.

Profit and loss account for January 20X2

'Real terms' (based on the maintenance of financial capital)

	£	£
Sales		2400
Cost of goods sold: historical cost	2000	
COSA	200	
Depreciation: historical cost	100	
depreciation adjustment	50	2350
Current cost operating profit		50
add Realised holding gains:		
Cost of sales adjustment	200	
Depreciation adjustment	50	
	250	
Unrealised holding gains: fixed asset	1750	2000
Total gains		2050
less Inflation adjustment (20% × £4 500)		900
Total real gains		£1150

Summary

We started the chapter by describing the theoretical roots of current cost accounting and paid tribute to the contributions made by Edwards and Bell, Bonbright and Baxter. We explained that Edwards and Bell developed the distinction between holding and operating gains while Bonbright and, subsequently, Baxter developed the ideas associated with the deprival value concept, which is also known as value to the business and current cost.

We then introduced the basic elements of Current Cost Accounting (CCA), using the deprival value concept of asset valuation and two different possible concepts of capital maintenance, operating capital maintenance and financial capital maintenance respectively. The first requires four current cost adjustments which we described and illustrated, namely the cost of sales, depreciation, monetary working capital and gearing adjustments. The second replaces the monetary working capital and gearing adjustments by an inflation adjustment based on a general index such as the Retail Price Index (RPI).

Recommended reading

See end of Chapter 21.

Questions

See end of Chapter 21.