CHAPTER 4

Accounting for price-level changes

4.1 Introduction

The main purpose of this chapter is to explain the impact of inflation on profit and capital measurement and the concepts that have been proposed to incorporate the effect into financial reports by adjusting the historical cost data. These concepts are periodically discussed but there is no general support for any specific concept among practitioners in the field.

Objectives

By the end of the chapter, you should be able to:

- describe the problems of historical cost accounting (HCA);
- explain the approach taken in each of the inflation adjusting models;
- prepare financial statements applying each model (HCA, CPP, CCA, NRVA);
- critically comment on each model (HCA, CPP, CCA, NRVA);
- describe the approach being taken by standard setters and future developments.

4.2 Review of the problems of historical cost accounting (HCA)

The transaction-based historical cost concept was unchallenged in the UK until price levels started to hedge upwards at an ever-increasing pace during the 1950s and reached an annual rate of increase of 20% in the mid 1970s. The historical cost base for financial reporting witnessed growing criticism. The inherent faults of the system were discussed in Chapter 3, but inflation exacerbates the problem in the following ways:

- Profit is overstated when inflationary changes in the value of assets are ignored.
- Comparability of business entities, which is so necessary in the assessment of performance and growth, becomes distorted.
- The decision-making process, the formulation of plans and the setting of targets may be suboptimal if financial base data are out of date.
- Financial reports become confusing at best, misleading at worst, because revenue is mismatched with differing historical cost levels as the monetary unit becomes unstable.
- Unrealised profits arising in individual accounting periods are increased as a result of inflation.

In order to combat these serious defects, current value accounting became the subject of research and controversy as to the most appropriate method to use for financial reporting.

4.3 Inflation accounting

A number of versions of current value accounting (CVA) were eventually identified, but the current value postulate was said to suffer from the following disadvantages:

- It destroys the factual nature of HCA, which is transaction based: the factual characteristic is to all intents and purposes lost as transaction-based historic values are replaced by judgemental values.
- It is not as objective as HCA because it is less verifiable from auditable documentation.
- It entails recognition of unrealised profit, a practice that is anathema to the traditionalist.
- The claimed improvement in comparability between commercial entities is a myth because of the degree of subjectivity in measuring current value by each.
- The lack of a single accepted method of computing current values compounds the subjectivity aspect. One fault-laden system is being usurped by another that is also faulty.

In spite of these criticisms, the search for a system of financial reporting devoid of the defects of HCA and capable of coping with inflation has produced a number of CVA models.

4.4 The concepts in principle

Several current income and value models have been proposed to replace or operate in tandem with the historical cost convention. However, in terms of basic characteristics, they may be reduced to the following three models:

- current purchasing power (CPP) or general purchasing power (GPP);
- current entry cost or replacement cost (RC);
- current exit cost or net realisable value (NRV).

We discuss each of these models below.

4.4.1 Current purchasing power accounting (CPPA)

The CPP model measures income and value by adopting a price index system. Movements in price levels are gauged by reference to price changes in a group of goods and services in **general** use within the economy. The aggregate price value of this **basket** of commodities-cum-services is determined at a base point in time and indexed as 100. Subsequent changes in price are compared on a regular basis with this base period price and the change recorded. For example, the price level of our chosen range of goods and services may amount to £76 on 31 March 20X1, and show changes as follows:

£76	at 31 March 20X1
£79	at 30 April 20X1
£81	at 31 May 20X1
£84	at 30 June 20X1

and so on.

The change in price may be indexed with 31 March as the base:

20X1	*Calculation*	*Index*
31 March	i.e. £76	100
30 April	i.e. $\frac{79}{76} \times 100$	103.9
31 May	i.e. $\frac{81}{76} \times 100$	106.6
30 June	i.e. $\frac{84}{76} \times 100$	110.5

In the UK, an index system similar in construction to this is known as the Retail Price Index (RPI). It is a barometer of fluctuating price levels covering a miscellany of goods and services as used by the average household. Thus it is a **general** price index. It is amended from time to time to take account of new commodities entering the consumer's range of choice and needs. As a model, it is unique owing to the introduction of the concept of gains and losses in **purchasing power**.

4.4.2 Current entry or replacement cost accounting (RCA)

The replacement cost (RC) model assesses income and value by reference to entry costs or current replacement costs of materials and other assets utilised within the business entity. The valuation attempts to replace like with like and thus takes account of the quality and condition of the existing assets. A motor vehicle, for instance, may have been purchased brand new for £25,000 with an expected life of five years, an anticipated residual value of nil and a straight-line depreciation policy. Its HCA carrying value in the statement of financial position at the end of its first year would be £25,000 less £5,000 = £20,000. However, if a similar new replacement vehicle cost £30,000 at the end of year one, then its gross RC would be £30,000; depreciation for one year based on this sum would be £6,000 and the net RC would be £24,000. The increase of £4,000 is a holding gain and the vehicle with a HCA carrying value of £20,000 would be revalued at £24,000.

4.4.3 Current exit cost or net realisable value accounting (NRVA)

The net realisable value (NRV) model is based on the economist's concept of opportunity cost. It is a model that has had strong academic support, most notably in Australia from Professor Ray Chambers who referred to this approach as Continuous Contemporary Accounting (CoCoA). If an asset cost £25,000 at the beginning of year one and at the end of that year it had a NRV of £21,000 after meeting selling expenses, it would be carried in the NRV statement of financial position at £21,000. This amount represents the cash forgone by holding the asset, i.e. the opportunity of possessing cash of £21,000 has been sacrificed in favour of the asset. Depreciation for the year would be £25,000 less £21,000 = £4,000.

4.5 The four models illustrated for a company with cash purchases and sales

We will illustrate the effect on the profit and net assets of Entrepreneur Ltd.

Entrepreneur Ltd commenced business on 1 January 20X1 with a capital of £3,000 to buy and sell second-hand computers. The company purchased six computers on 1 January 20X1 for £500 each and sold three of the computers on 15 January for £900 each.

The following data are available for January 20X1:

	Retail Price Index	*Replacement cost per computer* £	*Net realisable value* £
1 January	100		
15 January	112	610	
31 January	130	700	900

The statement of comprehensive incomes and statements of financial position are set out in Figure 4.1 with the detailed workings in Figure 4.2.

4.5.1 Financial capital maintenance concept

HCA and CPP are both transaction-based models that apply the financial capital maintenance concept. This means that profit is the difference between the opening and closing net assets

Figure 4.1 Trading account for the month ended 31 January 20X1

Statements of comprehensive income for the month ended 31 January 20X1

	HCA £		CPP CPP£		RCA £		NRVA £	
Sales	2,700	W1	3,134	W5	2,700	W1	2,700	W1
Opening inventory	—		—		—		—	
Purchases	3,000	W2	3,900	W6	3,000	W2	3,000	W2
Closing inventory	(1,500)	W3	(1,950)	W7	(1,500)	W3	(1,500)	W3
COSA	na		na		330	W10	na	
Cost of sales	1,500		1,950		1,830		1,500	
Holding gain	na		na		na		1,200	W15
Profit	**1,200**		**1,184**		**870**		**2,400**	

Statement of financial position as at 31 January 20X1

	£		CPP£		£		£	
Current assets								
Inventory	1,500	W3	1,950	W7	2,100	W11	2,700	W14
Cash	2,700	W4	2,700		2,700		2,700	
Capital employed	**4,200**		**4,650**		**4,800**		**5,400**	
Capital	3,000		3,900	W8	3,000		3,000	
Holding gains								
On inventory consumed	na		na		330	W12		
On inventory in hand	na		na		600	W13		
Profit	1,200		1,184		870		2,400	
Loss on monetary items	na		(434)	W9	na		na	
	4,200		4,650		4,800		5,400	

na = not applicable

Figure 4.2 Workings (W)

HCA

W1 Sales:	3 × £900 = £2,700	
W2 Purchases:	6 × £500 = £3,000	
W3 Closing inventory:	3 × £500 = £1,500	
W4 Cash:	1 January 20X1 Capital	3,000
	1 January 20X1 Purchases	(3,000)
	1 January 20X1 Balance	nil
	15 January 20X1 Sales	
	3 × £900 =	£2,700
	31 January 20X1 Balance	£2,700

CPP

		CPP£
W5 Sales	£2,700 × 130/112 =	3,134
W6 Purchases	£3,000 × 130/100 =	3,900
W7 Closing inventory	£1,500 × 130/100 =	1,950
W8 Capital	£3,000 × 130/100 =	3,900

W9 Balance of cash was nil until 15 January when sales generated £2,700. This sum was held until 31 January during which period cash, a monetary item, lost purchasing power. The loss of purchasing power is measured by applying the general index to the cash held.
£2,700 × 130/112 – £2,700 = CPP £434.

RCA

W10 Additional replacement cost of inventory consumed as at the date of sale is measured as a cost of sales adjustment (COSA). COSA is calculated as follows:

3 × £610 =	1,830
Less: 3 × £500 =	1,500
COSA	£330

W11 Closing inventory: 3 × £700 = £2,100

W12 Holding gains on inventory consumed: as for W10 = £330

W13	Inventory at replacement cost	= 3 × £700 = 2,100
	Less: inventory at cost	= 3 × £500 = 1,500
	Holding gains on closing inventory	£600

NRVA

W14 Closing inventory at net realisable value = 900 × 3 = £2,700

W15	3 × £900 =	2,700
	3 × £500 =	1,500
	Holding gain	£1,200

(expressed in HC £) or the opening and closing net assets (expressed in HC £ indexed for RPI changes) adjusted for any capital introduced or withdrawn during the month.

CPP adjustments

- All historical cost values are adjusted to a common index level for the month. In theory this can be the index applicable to any day of the financial period concerned. However, in practice it has been deemed preferable to use the last day of the period; thus the financial statements show the latest price level appertaining to the period.
- The application of a general price index as an adjusting factor results in the creation of an **alien** currency of **purchasing power**, which is used in place of sterling. Note, particularly, the impact on the entity's sales and capital compared with the other models. **Actual** sales shown on **invoices** will still read £2,700.
- Note the application of the concept of gain or loss on holding monetary items. In this example there is a monetary loss of CPP £434 as shown in Working 9 in Figure 4.2.

4.5.2 Operating capital maintenance concept

Under this concept capital is only maintained if sufficient income is retained to maintain the business entity's physical operating capacity, i.e. its ability to produce the existing level of goods or services. Profit is, therefore, the residual after increasing the cost of sales to the cost applicable at the date of sale.

- Basically, only two adjustments are involved: the additional replacement cost of inventory consumed and holding gains on closing inventories. However, in a comprehensive exercise an adjustment will be necessary regarding fixed assets and you will also encounter a gearing adjustment.
- Notice the concept of holding gains. This model introduces, in effect, unrealised profits in respect of closing inventories. The holding gain concerning inventory consumed at the time of sale has been realised and deducted from what would have been a profit of £1,200. The statement discloses profits of £870.

4.5.3 Capacity to adapt concept

The HCA, CPP and RCA models have assumed that the business will continue as a going concern and only distribute realised profits after retaining sufficient profits to maintain either the financial or operating capital.

The NRVA concept is that a business has the capacity to realise its net assets at the end of each financial period and reinvest the proceeds and that the NRV accounts provide management with this information.

- This produces the same initial profit as HCA, namely £1,200, but a peculiarity of this system is that this realised profit is supplemented by **unrealised** profit generated by holding stocks. Under RCA accounting, such gains are shown in a separate account and are not treated as part of real income.
- This simple exercise has ignored the possibility of investment in fixed assets, thus depreciation is not involved. A reduction in the NRV of fixed assets at the end of a period compared with the beginning would be treated in a similar fashion to depreciation by being charged to the revenue account, and consequently profits would be reduced. An increase in the NRV of such assets would be included as part of the profit.

4.5.4 The four models compared

Dividend distribution

We can see from Figure 4.1 that if the business were to distribute the profit reported under HCA, CPP or NRVA the physical operating capacity of the business would be reduced and it would be paying dividends out of capital:

	HCA	*CPP*	*RCA*	*NRVA*
Realised profit:	1,200	1,184	870	1,200
Unrealised profit	—	—	—	1,200
Profit for month	1,200	1,184	870	2,400

Shareholder orientation

The CPP model is shareholder orientated in that it shows whether shareholders' funds are keeping pace with inflation by maintaining their purchasing power. Only CPP changes the value of the share capital.

Management orientation

The RCA model is management orientated in that it identifies holding gains which represent the amounts required to be retained in order to simply maintain the operating capital.

RCA measures the impact of inflation on the individual firm, in terms of the change in price levels of its **raw materials and assets**, i.e. inflation peculiar to the company, whereas CPP measures general inflation in the economy as a whole. CPP may be meaningless in the case of an individual company. Consider a firm that carries a constant volume of stock valued at £100 in HCA terms. Now suppose that price levels double when measured by a general price index (GPI), so that its inventory is restated to £200 in a CPP system. If, however, the cost of that **particular** inventory has sustained a price change consisting of a five-fold increase, then under the RCA model the value of the stock should be £500.

In the mid 1970s, when the accountancy profession was debating the problem of changing price level measurement, the general price level had climbed by some 23% over a period during which petroleum-based products had risen by 500%.

4.6 Critique of each model

A critique of the various models may be formulated in terms of their characteristics and peculiarities as virtues and defects in application.

4.6.1 HCA

This model's virtues and defects have been discussed in Chapter 3 and earlier in this chapter.

4.6.2 CPP

Virtues

- It is an **objective measure** since it is still transaction based, as with HCA, and the possibility of subjectivity is constrained if a GPI is used that has been constructed by a central agency such as a government department. This applies in the UK, where the Retail Price Index is constructed by the Department for Employment and Learning.

- It is a **measure of shareholders' capital** and that capital's maintenance in terms of purchasing power units. Profit is the residual value after maintaining the money value of capital funds, taking account of changing price levels. Thus it is a measure readily understood by the shareholder/user of the accounts. It can prevent payment of a dividend out of real capital as measured by GPPA.
- It **introduces the concept of monetary items** as distinct from non-monetary items and the attendant concepts of gains and losses in holding net monetary liabilities compared with holding net monetary assets. Such gains and losses are experienced on a disturbing scale in times of inflation. They are **real** gains and losses. The **basic** RCA and NRV models do not recognise such 'surpluses' and 'deficits'.

Defects

- It is **HCA based but adjusted** to reflect general price movements. Thus it possesses the characteristics of HCA, good and bad, but with its values updated in the light of an arithmetic measure of general price changes. The major defect of becoming out of date is mitigated to a degree, but the impact of inflation on the entity's income and capital may be at variance with the rate of inflation affecting the economy in general.
- It may be **wrongly assumed that the CPP statement of financial position is a current value statement**. It is not a current value document because of the defects discussed above; in particular, asset values may be subject to a different rate of inflation than that reflected by the GPI.
- It **creates an alien unit of measurement** still labelled by the £ sign. Thus we have the HCA £ and the CPP £. They are different pounds: one is the bona fide pound, the other is a synthetic unit. This may not be fully appreciated or understood by the user when faced with the financial accounts for the recent accounting period.
- Its **concept of profit is dangerous**. It pretends to cater for changing prices, but at the same time it fails to provide for the additional costs of replacing stocks sold or additional depreciation due to the escalating replacement cost of assets. The inflation encountered by the business entity will not be the same as that encountered by the whole economy. Thus the maintenance of the CPP of shareholders' capital via this concept of profit is not the maintenance of the entity's operating capital in physical terms, i.e. its capacity to produce the same volume of goods and services. The use of CPP profit as a basis for decision making without regard to RCA profit can have disastrous consequences.

4.6.3 RCA

Virtues

- Its **unit of measurement** is the monetary unit and consequently it is understood and accepted by the user of accountancy reports. In contrast, the CPP system employs an artificial unit based on arithmetic relationships, which is different and thus unfamiliar.
- It **identifies and isolates holding gains** from operating income. Thus it can prevent the inadvertent distribution of dividends in excess of operating profit. It satisfies the prudence criterion of the traditional accountant and **maintains the physical operating capacity** of the entity.
- It introduces **realistic current values** of assets in the statement of financial position, thus making the statement of financial position a 'value' statement and consequently more meaningful to the user. This contrasts sharply with the statement of financial position as a list of unallocated carrying costs in the HCA system.

Defects

- It is a **subjective measure**, in that replacement costs are often necessarily based on estimates or assessments. It does not possess the factual characteristics of HCA. It is open to manipulation within constraints. Often it is based on index numbers which themselves may be based on a compound of prices of a mixture of similar commodities used as raw material or operating assets. This subjectivity is exacerbated in circumstances where rapid technological advance and innovation are involved in the potential new replacement asset, e.g. computers, printers.
- It **assumes replacement of assets** by being based on their replacement cost. Difficulties arise if such assets are not to be replaced by similar assets. Presumably, it will then be assumed that a replacement of equivalent value to the original will be deployed, however differently, as capital within the firm.

4.6.4 NRVA

Virtues

- It is a concept readily understood by the user. The value of any item invariably has two measures – a buying price and a selling price – and the twain do not usually meet. However, when considering the value of an **existing** possession, the owner instinctively considers its 'value' to be that in potential sale, i.e. NRV.
- It **avoids the need to estimate depreciation** and, in consequence, the attendant problems of assessing life-span and residual values. Depreciation is treated as the arithmetic difference between the NRV at the end of a financial period and the NRV at its beginning.
- It is **based on opportunity cost** and so can be said to be more meaningful. It is the **sacrificial** cost of possessing an asset, which, it can be argued, is more authentic in terms of being a true or real cost. If the asset were not possessed, its cash equivalent would exist instead and that cash would be deployed in other opportunities. Therefore, NRV = cash = opportunity = cost.

Defects

- It is a **subjective measure** and in this respect it possesses the same major fault as RCA. It can be said to be less prudent than RCA because NRV will tend to be higher in some cases than RCA. For example, when valuing finished inventories, a profit content will be involved.
- It is **not a realistic measure** as most assets, except finished goods, are possessed in order to be utilised, not sold. Therefore, NRV is irrelevant.
- It is **not always determinable**. The assets concerned may be highly specialist and there may be no ready market by which a value can be easily assessed. Consequently, any particular value may be fictitious or erroneous, containing too high a holding gain or, indeed, too low a holding loss.
- It **violates the concept of the going concern**, which demands that the accounts are drafted on the basis that there is no intention to liquidate the entity. Admittedly, this concept was formulated with HCA in view, but the acceptance of NRV implies the possibility of a cessation of trading.

- It is less reliable and verifiable than HC.
- The statement of comprehensive income will report a more volatile profit if changes in NRV are taken to the statement of comprehensive income each year.
- The profit arising from the changes in NRV may not have been realised.

4.7 Operating capital maintenance – a comprehensive example

In Figure 4.1 we considered the effect of inflation on a cash business without fixed assets, credit customers or credit suppliers. In the following example, Economica plc, we now consider the effect where there are non-current assets and credit transactions.

The HCA statements of financial position as at 31 December 20X4 and 20X5 are set out in Figure 4.3 and index numbers required to restate the non-current assets, inventory and monetary items in Figure 4.4.

Figure 4.3 Economica plc HCA statement of financial position

Statements of financial position as at 31 December on the basis of HCA

		20X5		*20X4*
	£000	£000	£000	£000
Non-current assets:				
Cost	85,000		85,000	
Depreciation	34,000		25,500	
		51,000		59,500
Current assets:				
Inventory	25,500		17,000	
Trade receivables	34,000		23,375	
Cash and bank	17,000		1,875	
	76,500		42,250	
Current liabilities:				
Trade payables	25,500		17,000	
Income tax	8,500		4,250	
Dividend proposed	5,000		4,000	
	39,000		25,250	
Net current assets	37,500		17,000	
Less: 8% debentures	11,000		11,000	
		26,500		6,000
		77,500		65,500
Share capital and reserves:				
Authorised and issued £1 ordinary shares		50,000		50,000
Share premium		1,500		1,500
Retained earnings		26,000		14,000
		77,500		65,500

Figure 4.4 Index data relating to Economica plc

1 Index numbers as prepared by the Central Statistical Office for non-current assets:

1 January 20X2	100
1 January 20X5	165
1 January 20X6	185
Average for 20X4	147
Average for 20X5	167

2 All non-current assets were acquired on 1 January 20X2. There were no further acquisitions or disposals during the four years ended 31 December 20X5.

3 Indices as prepared by the Central Statistical Office for inventories and monetary working capital adjustments were:

1 October 20X4	115
31 December 20X4	125
15 November 20X4	120
1 October 20X5	140
31 December 20X5	150
15 November 20X5	145
Average for 20X5	137.5

4 Three months' inventory is carried.

5 Depreciation: historical cost based on 10% pa straight-line with residual value of nil:

	£HCA
20X4	8,500,000
20X5	8,500,000

4.7.1 Restating the opening statement of financial position to current cost

The non-current assets and inventory are restated to their current cost as at the date of the opening statement as shown in W1 and W2 below. The increase from HC to CC represents an unrealised holding gain which is debited to the asset account and credited to a reserve account called a current cost reserve, as in W3 below.

The calculations are as follows. First we shall convert the HCA statement of financial position in Figure 4.3, as at 31 December 20X4, to the CCA basis, using the index data in Figure 4.4.

The **non-monetary items**, comprising the non-current assets and inventory, are converted and the converted amounts are taken to the CC statement and the increases taken to the current cost reserve, as follows.

(W1) Property, plant and equipment

	HCA *£000*	*Index*		*CCA* *£000*	*Increase* *£000*
Cost	85,000	$\times \frac{165}{100}$	=	140,250	55,250
Depreciation	25,500	$\times \frac{165}{100}$	=	42,075	16,575
	59,500			98,175	38,675

The CCA valuation at 31 December 20X4 shows a net increase in terms of numbers of pounds sterling of £38,675,000. The £59,500,000 in the HCA statement of financial position will be replaced in the CCA statement by £98,175,000.

(W2) Inventories

HCA £000		*Index*		*CCA* £000		*Increase* £000
17,000	×	$\frac{125}{120}$	=	17,708	=	708

Note that Figure 4.4 specifies that three months' inventories are held. Thus on average they will have been purchased on 15 November 20X4, on the assumption that they have been acquired and consumed evenly throughout the calendar period. Hence, the index at the time of purchase would have been 120. The £17,000,000 in the HCA statement of financial position will be replaced in the CCA statement of financial position by £17,708,000.

(W3) Current cost reserve

The total increase in CCA carrying values for non-monetary items is £39,383,000, which will be credited to CC reserves in the CC statement. It comprises £38,675,000 on the non-current assets and £708,000 on the inventory.

Note that monetary items do not change by virtue of inflation. Purchasing power will be lost or gained, but the carrying values in the CCA statement will be identical to those in its HCA counterpart. We can now compile the CCA statement as at 31 December 20X4 – this will show net assets of £104,883,000.

4.7.2 Adjustments that affect the profit for the year

The statement of comprehensive income for the year ended 31 December 20X5 set out in Figure 4.5 discloses a profit before interest and tax of £26,350,000. We need to deduct realised holding gains from this profit to avoid the distribution of dividends that would reduce the operating capital. These deductions are a cost of sales adjustment (COSA), a depreciation adjustment (DA) and a monetary working capital adjustment (MWCA). The accounting treatment is to debit the statement of comprehensive income and credit the current cost reserve.

The adjustments are calculated as follows.

(W4) Cost of sales adjustment (COSA) using the average method

We will compute the cost of sales adjustment by using the average method. The average purchase price index for 20X5 is 137.5. If price increases have moved at an even pace throughout the period, this implies that consumption occurred, on average, at 30 June, the mid-point of the financial year.

	HCA £000		*Adjustment*		*CCA* £000		*Difference* £000
Opening inventory	17,000	×	$\frac{137.5}{120}$	=	19,479	=	2,479
Purchases	—		—		—		—
	17,000				19,479		
Closing inventory	(25,500)	×	$\frac{137.5}{145}$	=	24,181	=	1,319
	(8,500)				(4,702)		3,798

Figure 4.5 Economica plc HCA statement of comprehensive income

Statement of comprehensive income for the year ended 31 December 20X5, on the basis of HCA

		20X5		20X4
		£000		£000
Turnover		42,500		38,250
Less: Cost of sales		(12,070)		(23,025)
Gross profit		30,430		15,225
Less: Distribution costs	2,460		2,210	
Less: Administrative expenses	1,620		1,540	
		(4,080)		(3,750)
Profit before interest and tax		26,350		11,475
Interest		(880)		(880)
Profit before tax		25,470		10,595
Income tax expense		(8,470)		(4,250)
Profit after tax		17,000		6,345
Dividend		(5,000)		(4,000)
Retentions		12,000		2,345
Balance b/f		14,000		11,655
Balance c/f		26,000		14,000
EPS		34p		13p

The impact of price changes on the cost of sales would be an increase of £3,798,000, causing a profit decrease of like amount and a current cost reserve increase of like amount.

(W5) Depreciation adjustment: average method

As assets are consumed throughout the year, the CCA depreciation charge should be based on average current costs.

	HCA £000		*Adjustment*		*CCA* £000		*Difference* £000
Depreciation	8,500	×	$\frac{167}{100}$	=	14,195	=	5,695

(W6) Monetary working capital adjustment (MWCA)

The objective is to transfer from the statement of comprehensive income to CC reserve the amount by which the need for monetary working capital (MWC) has increased due to rising price levels. The change in MWC from one statement of financial position to the next will be the consequence of a combination of changes in volume and escalating price movements. Volume change may be segregated from the price change by using an average index.

	20X5	*20X4*		*Change*
	£000	*£000*		*£000*
Trade receivables	34,000	23,375		
Trade payables	25,500	17,000		
MWC =	8,500	6,375	Overall change =	2,125

The MWC is now adjusted by the average index for the year.

This adjustment will reveal the change in volume.

$$\left(8{,}500 \times \frac{137.5}{150}\right) - \left(6{,}373 \times \frac{137.5}{125}\right)$$

=	7,792	– 7,012	= Volume change	780
So price change =				1,345

The profit before interest and tax will be reduced as follows:

	£000	*£000*
Profit before interest and tax		26,350
Less:		
COSA	(3,798)	
DA	(5,695)	
MWCA	(1,345)	
Current cost operating adjustments		(10,838)
Current cost operating profit		15,512

The adjustments will be credited to the current cost reserve.

4.7.3 Unrealised holding gains on non-monetary assets as at 31 December 20X5

The holding gains as at 31 December 20X4 were calculated in section 4.7.1 above for non-current assets and inventory. A similar calculation is required to restate these at 20X5 current costs for the closing statement of financial position. The calculations are as in Working 7 below.

(W7) Non-monetary assets

(i) Holding gain on non-current assets	*£000*
Revaluation at year-end	
Non-current assets at 1 January 20X5 (as W1) at CCA revaluation	140,250
CCA value at 31 December 20X5 = $140{,}250 \times \frac{185}{165}$ =	157,250
Revaluation holding gain for 20X5 to CC reserve in W8	**17,000**

This holding gain of £17,000,000 is transferred to CC reserves.

(ii) Backlog depreciation on non-current assets

CCA aggregate depreciation at 31 December 20X5 for CC statement of financial position	*£000*
= £HCA 34,000,000 × 185/100 in CC statement of financial position	**62,900**
Less: CCA aggregate depreciation at 1 January 20X5 (as per W1 and statement of financial position at 1 January 20X5)	42,075
Being CCA depreciation as revealed between opening and closing statements of financial position	20,825
But CCA depreciation charged in revenue accounts (i.e. £8,500,000 in £HCA plus additional depreciation of £5,695,000 per W5) =	14,195
So total backlog depreciation to CC reserve in W8	**6,630**

The CCA value of non-current assets at 31 December 20X5:	*£000*
Gross CCA value (above)	157,250
Depreciation (above)	62,900
Net CCA carrying value in the CC statement of financial position in W8	**94,350**

This £6,630,000 is backlog depreciation for 20X5. Total backlog depreciation is not expensed (i.e. charged to revenue account) as an adjustment of HCA profit, but is charged against CCA reserves. The net effect is that the CC reserve will increase by £10,370,000, i.e. £17,000,000 – £6,630,000.

(iii) Inventory valuation at year-end

CCA valuation at 31 December 20X5

£HCA000			£CCA000	£CCA000
= 25,500	×	150/145 =	26,379 = increase of	879

CCA valuation at 1 January 20X5 (per W2)

= 17,000	×	125/120 =	17,708 = increase of	708
Inventory holding gain occurring during 20X5 to W8				**171**

4.7.4 Current cost statement of financial position as at 31 December 20X5

The current cost statement as at 31 December 20X5 now discloses non-current assets and inventory adjusted by index to their current cost and the retained profits reduced by the current cost operating adjustments. It appears as in Working 8 below.

(W8) Economica plc: CCA statement of financial position as at 31 December 20X5

			20X5			20X4
Non-current assets	£000		£000	£000		£000
Cost	157,250	(W7(i))		140,250	(W1)	
Depreciation	62,900	(W7(ii))		42,075	(W1)	
			94,350	(W7(ii))		98,175
Current assets						
Inventory	26,379	(W7(iii))		17,708	(W2)	
Trade receivables	34,000			23,375		
Cash	17,000			1,875		
	77,379			42,958		
Current liabilities						
Trade payables	25,500			17,000		
Income tax	8,500			4,250		
Dividend proposed	5,000			4,000		
	39,000			25,250		
Net current assets	38,379			17,708		
Less: 8% debentures	11,000			11,000		
			27,379			6,708
			121,729			104,883
Financed by						
Share capital: authorised and issued £1 shares			50,000			50,000
Share premium			1,500			1,500
* CC reserve			55,067			39,383
** Retained profit			15,162			14,000
Shareholders' funds			121,729			104,883

* **CC reserve**	£000		£000	
Opening balance			39,383	(W3)
Holding gains				
Non-current assets	17,000	(W7(i))		
Inventory	171	(W7(iii))		
			17,171	
COSA	3,798	(W4)		
MWCA	1,345	(W6)		
Less: backlog depreciation	(6,630)	(W7(ii))	(1,487)	
			55,067	

** **Retained profit**		
Opening balance		14,000 (Figure 4.5)
HCA profit for 20X5	12,000	
COSA	(3,798) (W4)	
Extra depreciation	(5,695) (W5)	
MWCA	(1,345) (W6)	
		1,162
CCA profit for 20X5		15,162

4.7.5 How to take the level of borrowings into account

We have assumed that the company will need to retain £10,838,000 from the current year's earnings in order to maintain the physical operating capacity of the company. However, if the business is part financed by borrowings then part of the amount required may be assumed to come from the lenders. One of the methods advocated is to make a gearing adjustment. The gearing adjustment that we illustrate here has the effect of reducing the impact of the adjustments on the profit after interest, i.e. it is based on the realised holding gains only.

The gearing adjustment will change the carrying figures of CC reserves and retained profit, but not the shareholders' funds, as the adjustment is compensating. The gearing adjustment cannot be computed before the determination of the shareholders' interest because that figure is necessary in order to complete the gearing calculation.

Gearing adjustment

The CC operating profit of the business is quantified after making such retentions from the historical profit as are required in order to maintain the physical operating capacity of the entity. However, from a shareholder standpoint, there is no need to maintain in real terms the portion of the entity financed by loans that are fixed in monetary values. Thus, in calculating profit attributable to shareholders, that part of the CC adjustments relating to the proportion of the business financed by loans can be deducted:

(W9) Gearing adjustment =

$$\frac{\text{Average net borrowings for year}}{\left(\begin{array}{c}\text{Average net borrowings}\\ \text{for year}\end{array}\right) + \left(\begin{array}{c}\text{Average shareholders' funds}\\ \text{for year}\end{array}\right)} \times \begin{array}{c}\text{Aggregate}\\ \text{adjustments}\end{array}$$

This formula is usually expressed as $\frac{L}{(L+S)} \times A$

where L = loans (i.e. net borrowings); S = shareholders' interest or funds; A = adjustments (i.e. extra depreciation + COSA + MWCA). Note that $L/(L + S)$ is often expressed as a percentage of A (see example below where it is 6.31%).

Net borrowings

This is the sum of all liabilities less current assets, excluding items included in MWC or utilised in computing COSA. In this instance it is as follows:

Note: in some circumstances (e.g. new issue of debentures occurring during the year) a weighted average will be used.

	Closing balance £*000*	*Opening balance* £*000*
Debentures	11,000	11,000
Income tax	8,500	4,250
Cash	(17,000)	(1,875)
Total net borrowings, the average of which equals L	2,500	13,375

$$\text{Average net borrowings} = \frac{2{,}500{,}000 + 13{,}375{,}000}{2} = £7{,}937{,}500$$

Net borrowings plus shareholders' funds

Shareholders' funds in CC £ (inclusive of proposed dividends)	126,729	108,883
Add: net borrowings	2,500	13,375
	129,229	122,258

Or, alternatively:

	£*000*	£*000*
Non-current assets	94,350	98,175
Inventory	26,379	17,708
MWC	8,500	6,375
	129,229	122,258

$$\text{Average } L + S = \frac{129{,}229{,}000 + 122{,}258{,}000}{2}$$

$$= 125{,}743{,}500$$

$$\text{So gearing} = \frac{L}{L+S} \times A$$

$$\frac{£7{,}937{,}500}{125{,}743{,}500} \times \frac{\text{(COSA + MWCA + Extra depreciation)}}{(3{,}798{,}000 + 1{,}345{,}000 + 5{,}695{,}000)}$$

$$= 6.31\% \text{ of } £10{,}838{,}000 = £683{,}877, \text{ say } \mathbf{£684{,}000}$$

Thus the CC adjustment of £10,838,000 charged against historical profit may be reduced by £684,000 due to a gain being derived from net borrowings during a period of inflation as shown in Figure 4.6. The £684,000 is shown as a deduction from interest payable.

Figure 4.6 Economica plc CCA statement of income

Economica plc CCA statement of comprehensive income for year ended 31 December 20X5 (i.e. under the operating capital maintenance concept)

		£000
Turnover		42,500
Cost of sales		(12,070)
Gross profit		30,430
Distribution costs		(2,460)
Administrative expenses		(1,620)
Historical cost operating profit		26,350
Current cost operating adjustments		**(10,838)**
Current cost operating profit		15,512
Interest payable	(880)	
Gearing adjustment	**684**	(196)
Current profit on ordinary activities before taxation		15,316
Tax on profit on ordinary activities		(8,470)
Current cost profit for the financial year		6,846
Proposed dividends		(5,000)
Current cost profit retained		1,846
EPS		13.7p

4.7.6 The closing current cost statement of financial position

The closing statement with the non-current assets and inventory restated at current cost and the retained profit adjusted for current cost operating adjustments as reduced by the gearing adjustment is set out in Figure 4.7.

4.7.7 Real Terms System

The Real Terms System combines both CPP and current cost concepts. This requires a calculation of total unrealised holding gains and an inflation adjustment as calculated in Workings 10 and 11 below.

(W10) Total unrealised holding gains to be used in Figure 4.8

[Closing statement of financial position at CC – Closing statement of financial position at HC] – [Opening statement of financial position at CC – Opening statement of financial position at HC]

= (£121,729,000 – £77,500,000) – (£104,883,000 – £65,500,000) = £4,846,000

(W8) (Figure 4.3) (Working 8) (Figure 4.3)

Figure 4.7 Economica plc CCA statement of financial position

Economica plc CCA statement of financial position as at 31 December 20X5

20X4			*20X5*	
£000	£000	*Non-current assets*	£000	£000
140,250		Property, Plant and Equipment	157,250	
42,075		Depreciation	62,900	
	98,175			94,350
		Current assets		
17,708		Inventory	26,379	
23,375		Trade receivables	34,000	
1,875		Cash	17,000	
42,958			77,379	
		Current liabilities		
17,000		Trade payables	25,500	
		Other payables		
4,250		— income tax	8,500	
4,000		— proposed dividend	5,000	
25,250			39,000	
	17,708	*Net current assets*		38,379
		Non-current liabilities		
	(11,000)			(11,000)
	6,708			27,379
	104,883			121,729
	£000	*Capital and reserves*		£000
	50,000	Called-up share capital		50,000
	1,500	Share premium account		1,500
	53,383	Total of other reserves		70,229
	104,883			121,729

Analysis of 'Total of other reserves'

	£000		£000
	14,000	Statement of income	15,846
	39,383	Current cost reserve	54,383
	53,383		70,229

continued

Figure 4.7 (*continued*)

Movements on reserves

(a) Statement of income:

	£000	
Balance at 1 January 20X5	14,000	(from Figure 4.5)
Current cost retained profit	1,846	(from Figure 4.6)
Balance at 31 December 20X5	15,846	

(b) Current cost reserve:

	Total	*Non-current assets*	*Inventory*	*MWCA*	*Gearing*
	£000	*£000*	*£000*	*£000*	*£000*
Balance as at 1 January 20X5	39,383	38,675	708		
Movements during the year:					
Unrealised holding gains in the year	10,541	10,370	171		
Gearing adjustment	(684)				(684)
MWCA	1,345			1,345	
COSA	3,798		3,798		
Balance as at 31 December 20X5	54,383	49,045	4,677	1,345	(684)

(W11) General price index numbers to be used to calculate the inflation adjustment in Figure 4.8

General price index at 1 January 20X5 = 317.2
General price index at 31 December 20X5 = 333.2
Opening shareholders' funds at CC × Percentage change in GPI during the year =

$$104{,}883{,}000 \times \frac{333.2 - 317.2}{317.2} = £5{,}290{,}435, \text{ say } \mathbf{£5{,}290{,}000}$$

The GPP (or CPP) real terms financial capital

The real terms financial capital maintenance concept may be incorporated within the CCA system as in Figure 4.8 by calculating an inflation adjustment.

4.8 Critique of CCA statements

Considerable effort and expense are involved in compiling and publishing CCA statements. Does their usefulness justify the cost? CCA statements have the following uses:

1 The operating capital maintenance statement reveals CCA profit. Such profit has removed inflationary price increases in raw materials and other inventories, and thus is more realistic than the alternative HCA profit.

2 Significant increases in a company's buying and selling prices will give the HCA profit a holding gains content. That is, the reported HCA profit will include gains consequent upon holding inventories during a period when the cost of buying such inventories increases. Conversely, if specific inventory prices fall, HCA profit will be reduced as it takes account of losses sustained by holding inventory while its price drops. Holding gains and losses are quite different from operating gains and losses. HCA profit does not distinguish between the two, whereas CCA profit does.

Figure 4.8 Economica plc real terms statement of comprehensive income

Economica plc CCA statement of income under the real terms system for the year ended 31 December 20X5

	£000	£000
Historical cost profit after tax for the financial year		17,000
Add: Total unrealised holding gains arising during the year (see W10)	4,846	
Less: Realised holding gains previously recognised as unrealised	none	
	4,846	
Less: Inflation adjustment to CCA shareholders' funds (W11)	(5,290)	
Real holding gains		(444)
Total real gains		16,556
Deduct: proposed dividends		5,000
Amount retained		11,556

Real terms system: analysis of reserves

20X4		*20X5*
£000		£000
53,383	*Statement of income*	64,939
—	Financial capital maintenance reserve	5,290
53,383		70,229

Movements on reserves

	Income statement	*Financial capital maintenance reserve*
	£000	£000
Balances at 1 January 20X5	53,383	—
Amount retained	11,556	—
Inflation adjustment for year		5,290
Balances as at 31 December 20X5	64,939	5,290

3 HCA profit might be adjusted to reflect the moving price level syndrome:

(a) by use of the operating capital maintenance approach, which regards only the CCA **operating** profit as the authentic result for the period and which treats any holding gain or loss as a movement on reserves;

(b) by adoption of the real terms **financial** capital maintenance approach, which applies a general inflation measure via the RPI, combined with CCA information regarding holding gains.

Thus the statement can reveal information to satisfy the demands of the management of the entity itself – as distinct from the shareholder/proprietor, whose awareness of inflation may centre on the RPI. In this way the concern of operating management can be accommodated with the different interest of the shareholder. The HCA profit would fail on both these counts.

4 CC profit is important because:

(a) it quantifies cost of sales and depreciation after allowing for changing price levels; hence trading results, free of inflationary elements, grant a clear picture of entity activities and management performance;

(b) resources are maintained, having eliminated the possibility of paying dividend out of real capital;

(c) yardsticks for management performance are more comparable as a time series within the one entity and between entities, the distortion caused by moving prices having been alleviated.

4.9 The ASB approach

The ASB has been wary of this topic. It is only too aware that standard setters in the past have been unsuccessful in obtaining a consensus on the price level adjusting model to be used in financial statements. The chronology in Figure 4.9 illustrates the previous attempts to deal with the topic. Consequently, the ASB has clearly decided to follow a gradualist approach and to require uniformity in the treatment of specific assets and liabilities where it is current practice to move away from historical costs.

The ASB view was set out in a Discussion Paper, *The Role of Valuation in Financial Reporting*, issued in 1993.[1] The ASB had three options when considering the existing system of modified historic costs:

- to remove the right to modify cost in the statement of financial position;
- to introduce a coherent current value system immediately;
- to make *ad hoc* improvements to the present modified historic cost system.

Figure 4.9 Standard setters' unsuccessful attempts to replace HCA

1974	Statement of Accounting Practice SSAP 7 *Accounting for Changes in the Purchasing Power of Money* advocating the CPP model.
1975	*Inflation Accounting*, Report of the Inflation Accounting Committee (The Sandilands Report) advocating current cost accounting (CCA) rather than the CPP, RCA or NRVA model. The CCA system recommended by Sandilands was based on the deprival value of an asset, i.e. the value based on the loss, direct or indirect, sustainable by an entity if it were to be deprived of the asset concerned.
1984	SSAP 16 *Current Cost Accounting* was issued by the ASC requiring listed companies to produce CCA accounts as their primary financial report. There was widespread non-compliance and a new exposure draft ED 35 was issued effectively retaining HCA accounts as the primary financial report with supplementary current cost information.
1985	SSAP 16 was withdrawn and the ASC issued *Accounting for the Effects of Changing Prices: A Handbook*. The Handbook was interesting in that it set out four valuation bases if the financial capital maintenance concept was applied and four valuation bases if the operating capital maintenance concept was applied. Its preferred options were CCA under the financial capital maintenance concept which it referred to as real terms accounting (RTA) and CCA under the operating capital maintenance concept.

4.9.1 Remove the right to modify cost in the statement of financial position

This would mean pruning the system back to one rigorously based on the principles of historical costs, with current values shown by way of note.

This option has strong support from the profession not only in the UK, e.g. 'in our view . . . the most significant advantage of historical cost over current value accounting . . . is that it is based on the actual transactions which the company has undertaken and the cash flows that it has generated . . . this is an advantage not just in terms of reliability, but also in terms of relevance',[2] but also in the USA, e.g. 'a study showed that users were opposed to replacing the current historic cost based accounting model . . . because it provides them with a stable and consistent benchmark that they can rely on to establish historical trends'.[3]

Although this would have brought UK practice into line with that of the USA and some of the EU countries, it has been rejected by the ASB. This is no doubt on the basis that the ASB wishes to see current values established in the UK in the longer term.

4.9.2 Introduce a coherent current value system immediately

This would mean developing the system into one more clearly founded on principles embracing current values. One such system, advocated by the ASB in Chapter 6 of its *Statement of Accounting Principles*, is based on **value to the business**. The value to the business measurement model is eclectic in that it draws on various current value systems. The approach to establishing the value to the business of a specific asset is quite logical:

- If an asset is worth replacing, then use replacement cost (RC).
- If it is **not** worth replacing, then use:

  value in use (economic value) if it is worth keeping; **or**

  net realisable value (NRV) if it is **not** worth keeping.

The reasoning is that the value to the business is represented by the action that would be taken by a business if it were to be deprived of an asset – this is also referred to as the **deprival value**.

For example, assume the following:

	£
Historical cost	200,000
Accumulated depreciation (6 years straight line)	120,000
Net book value	80,000
Replacement cost (gross)	300,000
Aggregate depreciation	180,000
Depreciated replacement cost	120,000
Net realisable value (NRV)	50,000
Value in use (discounted future income)	70,565

If the asset were destroyed then it would be irrational to replace it at its depreciated replacement cost of £120,000 considering that the asset only has a value in use of £70,565.

However, the ASB did not see it as feasible to implement this system at that time because 'there is much work to be done to determine whether or not it is possible to devise a system that would be of economic relevance and acceptable to users and preparers of financial statements in terms of sufficient reliability without prohibitive cost'.[4]

Make *ad hoc* improvements to the present modified historical cost system

The ASB favoured this option for removing anomalies, on the basis that practice should be evolutionary and should follow various ASB pronouncements (e.g. on the revaluation of properties and quoted investments) on an *ad hoc* basis. The *Statement of Accounting Principles* continues to envisage that a mixed measurement system will be used and it focuses on the mix of historical cost and current value to be adopted.[5]

It is influenced in choosing this option by the recognition that there are anxieties about the costs and benefits of moving to a full current value system, and by the belief that a considerable period of experimentation and learning would be needed before such a major change could be successfully introduced.[6]

Given the inability of the standard setters to implement a uniform current value system in the past, it seems a sensible, pragmatic approach for the ASB to recognise that it would fail if it made a similar attempt now.

This approach has been applied in FRS 3 with the requirement for a new primary financial statement, the statement of total recognised gains and losses (see Chapter 8 for further discussion) to report unrealised gains and losses arising from revaluation.

The historical cost based system and the current value based system have far more to commend them than the *ad hoc* option chosen by the ASB. However, as a short-term measure, it leaves the way open for the implementation in the longer term of its preferred value to the business model.

4.10 The IASC/IASB approach

The IASB has struggled in the same way as the ASB in the UK in deciding how to respond to inflation rates that have varied so widely over time. Theoretically there is a case for inflation-adjusting financial statements whatever the rate of inflation but standard setters need to carry the preparers and users of accounts with them – this means that there has to be a consensus that the traditional HCA financial statements are failing to give a true and fair view. Such a consensus is influenced by the current rate of inflation.

When the rates around the world were in double figures, there was pressure for a **mandatory** standard so that financial statements were comparable. This led to the issue in 1983 of IAS 15 *Information Reflecting the Effects of Changing Prices* which required companies to restate the HCA accounts using either a general price index or replacement costs with adjustments for depreciation, cost of sales and monetary items.

As the inflation rates fell below double figures, there was less willingness by companies to prepare inflation-adjusted accounts and so, in 1989, the mandatory requirement was relaxed and the application of IAS 15 became **optional**.

In recent years the inflation rates in developed countries have ranged between 1% and 4% and so in 2003, twenty years after it was first issued, IAS 15 was **withdrawn** as part of the ASB Improvement Project.

These low rates have not been universal outside the developed world and there has remained a need to prepare inflation-adjusted financial statements where there is hyperinflation and the rates are so high that HCA would be misleading.

4.10.1 The IASB position where there is hyperinflation

What do we mean by hyperinflation?

IAS 29 *Financial Reporting in Hyperinflationary Economies* states that hyperinflation occurs when money loses purchasing power at such a rate that comparison of amounts from

transactions that have occurred at different times, even within the same accounting period, is misleading.

What rate indicates that hyperinflation exists?

IAS 29 does not specify an absolute rate – this is a matter of qualitative judgement – but it sets out certain pointers, such as people preferring to keep their wealth in non-monetary assets, people preferring prices to be stated in terms of an alternative stable currency rather than the domestic currency, wages and prices being linked to a price index, or the cumulative inflation rate over three years approaching 100%.

Countries where hyperinflation has occurred recently include Angola, Burma and Turkey.

How are financial statements adjusted?

The current year financial statements, whether HCA or CCA, must to be restated using the domestic measuring unit current at the statement of financial position date; if the current year should be the first year that restatement takes place then the opening statement of financial position also has to be restated.

Illustration of disclosures in IAS 29 adjusted accounts

The following is an extract from the 2002 accounts of Turkiye Petrol Rafinerileri.

> IAS 29 requires that financial statements prepared in the currency of a hyperinflationary economy be stated in terms of the measuring unit current at the statement of financial position date and the corresponding figures for previous periods be restated in the same terms. One characteristic that leads to the classification of an economy as hyperinflationary is a cumulative three-year inflation rate approaching 100%. Such cumulative rate in Turkey was 227% for the three years ended 31 December 2002 based on the wholesale price index announced by the Turkish State Institute of Statistics. The restatement has been calculated by means of conversion factors based on the Turkish countrywide wholesale price index (WPI).
>
> The index and corresponding conversion factors for year-ends are as follows (1994 average = 100)

	Index	*Conversion factor*
Year ended 31 December 1999	1,979.5	3.2729
Year ended 31 December 2000	2,626.0	2.4672
Year ended 31 December 2001	4,951.7	1.3083
Year ended 31 December 2002	6,478.8	1.0000

- Monetary assets and liabilities are not restated.
- Non-monetary assets and liabilities are restated by applying to the initial acquisition cost and any accumulated depreciation for fixed assets the relevant conversion factors reflecting the increase in WPI from date of acquisition.
- All items in the statements of income are restated.

4.11 Future developments

A mixed picture emerges when we try to foresee the future of changing price levels and financial reporting. The accounting profession has been reluctant to abandon the HC concept in favour of a 'valuation accounting' approach. In the UK and Australia many

companies have stopped revaluing their non-current assets, with a large proportion opting instead to revert to the historical cost basis with the two main factors influencing management's decision being cost effectiveness and future reporting flexibility.[7]

The pragmatic approach is prevailing with each class of asset and liability being considered on an individual basis. For example, non-current assets are reported at depreciated replacement cost unless this is higher than the economic value we discussed in Chapter 3; financial assets are reported at market value (exit value in the NRV model); current assets reported at lower of HC and NRV. In each case the resulting changes, both realised and unrealised, in value will find their way into the financial performance statement(s).

Fair values

A number of IFRSs now require or allow the use of fair values e.g. IFRS 3 *Business Combinations* in which fair value is defined as 'the amount for which an asset could be exchanged or a liability settled between knowledgeable, willing parties in an arm's length transaction'. This is equivalent to the NRVA model discussed above. It is defined as an exit value rather than a cost value but like NRVA it does not imply a forced sale, i.e. it is the best value that could be obtained.

It is interesting to note that in the US there is a view that financial statements should be primarily decision-useful. This is a move away from the position adopted by the IASB in its conceptual framework in which it states that financial statements have two functions – one to provide investors with the means to assess stewardship and the other the means to make sound economic decisions.

How will financial statements be affected if fair values are adopted?

The financial statements will have the same virtues and defects as the NRVA model (section 4.6.4 above). Some concerns have been raised that reported annual income will become more volatile and the profit that is reported may contain a mix of realised and unrealised profits. Supporters of the use of fair values see the income and statement of financial position as more relevant for decision making whilst accepting that the figures might be less reliable and not as effective as a means of assessing the stewardship by the directors.

Stewardship

Before the growth of capital markets, stewardship was the primary objective of financial reporting. This is reflected in company law, which viewed management as agents of the shareholders who should periodically provide an account of their performance to explain the use they have made of the resources that the owners put under their control, i.e. it is a means of governance by providing *retrospective* accountability.

With the growth of capital markets, the ability to generate cash flows became important when making decisions as to whether to buy, sell or hold shares, i.e. it is concerned with *prospective* performance.

This has given rise to an ongoing debate over the relative importance of stewardship reporting and there is a fundamental difference between the US and Europe. In the US, stewardship is seen as secondary to decision-usefulness, whereas in Europe reporting the past use of resources is seen as just as important as reporting the future wealth-generating potential of those resources.

In their efforts to agree on a common approach, the IASB and FASB issued a Discussion Paper *Preliminary Views on an Improved Conceptual Framework for Financial Reporting* which proposed that the converged framework should specify only one objective of financial reporting, namely the provision of information useful in making future resource allocation decisions. However, there is a strong argument to support the explicit recognition of two equal objectives.

The first is retrospective and stewardship based, and helps investors to assess the management: Have their strategies been effective? Have the assets been protected? Have the resources produced an adequate return? The second is prospective, helping investors to make a judgement as to future performance – a judgement that might well be influenced by their assessment of the past.

It is interesting to note that the IASB Framework[8] currently supports the importance of financial statements as a means of assessing stewardship stating:

> Financial statements also show the results of the stewardship of management, or the accountability of management for the resources entrusted to it. Those users who wish to assess the stewardship or accountability of management do so in order that they make economic decisions; these decisions may include, for example, whether to hold or sell their investment in the enterprise or whether to reappoint or replace the management.

Any revision to the conceptual framework should hold firm to equal weight being given to retrospective and prospective objectives.

The gradualist approach

It is very possible that the number of international standards requiring or allowing fair values will increase over time and reflect the adoption on a piecemeal basis. In the meantime, efforts[9] are in hand for the FASB and IASB to arrive at a common definition of fair value which can be applied to value assets and liabilities where there is no market value available. Agreeing a definition, however, is only a part of the exercise. If analysts are to be able to compare corporate performance across borders, then it is essential that both the FASB and the IASB agree that all companies should adopt fair value accounting – it has been proving difficult to gain acceptance for this in the US.

This means that in the future historical cost and realisation will be regarded as less relevant[10] and investors, analysts and management will need to come to terms with increased volatility in reported annual performance.

Summary

The traditional HCA system reveals disturbing inadequacies in times of changing price levels, calling into question the value of financial reports using this system. Considerable resources and energy have been expended in searching for a substitute model able to counter the distortion and confusion caused by an unstable monetary unit.

Three basic models have been developed: RCA, NRVA and CPP. Each has its merits and defects; each produces a different income value and a different capital value. However, it is important that inflation-adjusted values be computed in order to avoid a possible loss of entity resources and the collapse of the going concern.

The contemporary financial reporting scene is beset by problems such as the emergence of brand accounting, the debate on accounting for goodwill, the need for more informative revenue accounts and a sudden spate of financial scandals involving major industrial conglomerations. These have combined to raise questions regarding the adequacy of the annual accounts and the intrinsic validity of the auditors' report.

In assessing future prospects, it would seem that more useful financial information is needed. This need will be met by changes in the reporting system, which are beginning to include some form of 'value accounting' as distinct from HC accounting. Such value accounting will probably embrace inflationary adjustments to enable comparability to be maintained, as far as possible, in an economic environment of changing prices.

REVIEW QUESTIONS

1 (a) Explain the limitations of HCA when prices are rising.

(b) Why has the HCA model survived in spite of its shortcomings in times of inflation?

2 Explain the features of the CPP model in contrast with those of the CCA model.

3 What factors should be taken into account when designing a system of accounting for inflation?

4 To what extent are CCA statements useful to an investor?

5 Compare the operating and financial capital maintenance concepts.

6 'Historical cost accounting is the worst possible accounting convention, until one considers the alternatives.' Discuss this statement in relation to CPP, CCA and NRVA.

7 'To be relevant to investors, the profit for the year should include both realised and unrealised gains/losses.' Discuss.

8 Discuss the effect on setting performance bonuses for staff if financial performance for a period contains both realised and unrealised gains/losses.

9 'The relevant financial performance figure for an investor is the amount available for distribution at the statement of financial position date.' Discuss.

10 'Financial statements should reflect realistically the performance and position of an organisation, but most of the accountant's rules conflict directly with the concept of realism.' Discuss.

11 Explain why financial reports prepared under the historical cost convention are subject to the following major limitations:

- inventory is undervalued;
- the depreciation charge to the statement of comprehensive income is understated;
- gains and losses on net monetary assets are undisclosed;
- statement of financial position values are understated;
- periodic comparisons are invalidated.

12 Explain how each of the limitations in question 11 could be overcome.

13 In April 2000 the G4 + 1 Group acknowledged that market exit value is generally regarded as the basis for fair value measurement of financial instruments and was discussing the use of the deprival value model for the measurement of non-financial assets or liabilities, especially in cases in which the item is highly specialised and not easily transferable in the market in its current condition. The deprival value model would require that an asset or liability be measured at its replacement cost, net realisable value, or value in use, depending on the particular circumstances.

(a) Discuss reasons why financial and non-financial assets should be measured using different bases.

(b) Explain what is meant by 'depending on the particular circumstances'.

14 Explain the criteria for determining whether hyperinflation exists.

15 '…the IASB's failure to decide on a capital maintenance concept is regrettable as users have no idea as to whether total gains represent income or capital and are therefore unable to identify a meaningful "bottom line"'.[11] Discuss.

EXERCISES

An extract from the solution is provided on the Companion Website (www.pearsoned.co.uk/elliott-elliott) for exercises marked with an asterisk (*).

* Question 1

Shower Ltd was incorporated towards the end of 20X2, but it did not start trading until 20X3. Its historical cost statement of financial position at 1 January 20X3 was as follows:

	£
Share capital, £1 shares	2,000
Loan (interest free)	8,000
	£10,000
Non-current assets, at cost	6,000
Inventory, at cost (4,000 units)	4,000
	£10,000

A summary of Shower Limited's bank account for 20X3 is given below:

		£	£
1 Jan 20X3	Opening balance		nil
30 Jun 20X3	Sales (8,000 units)		20,000
Less			
29 Jun 20X3	Purchase (6,000 units)	9,000	
	Sundry expenses	5,000	14,000
31 Dec 20X3	Closing balance		£6,000

All the company's transactions are on a cash basis.

The non-current assets are expected to last for five years and the company intends to depreciate its non-current assets on a straight-line basis. The non-current assets had a resale value of £2,000 at 31 December 20X3.

Notes

1 The closing inventory is 2,000 units and the inventory is sold on a first-in-first-out basis.

2 All prices remained constant from the date of incorporation to 1 January 20X3, but thereafter, various relevant price indices moved as follows:

		Specific indices	
	General price level	*Inventory*	*Non-current assets*
1 January 20X3	100	100	100
30 June 20X3	120	150	140
31 December 20X3	240	255	200

Required:

Produce statements of financial position as at December 20X3 and statements of comprehensive incomes for the year ended on that date on the basis of:

(i) historical cost;
(ii) current purchasing power (general price level);
(iii) replacement cost;
(iv) continuous contemporary accounting (NRVA).

Question 2

The finance director of Toy plc has been asked by a shareholder to explain items that appear in the current cost statement of comprehensive income for the year ended 31.8.20X9 and the statement of financial position as at that date:

		£	£
Historical cost profit			143,000
Cost of sales adjustment	(1)	10,000	
Additional depreciation	(2)	6,000	
Monetary working capital adjustment	(3)	2,500	18,500
Current cost operating profit before tax			124,500
Gearing adjustment	(4)		2,600
CCA operating profit			127,100
Non-current assets at gross replacement cost		428,250	
Accumulated current cost depreciation	(5)	(95,650)	332,600
Net current assets			121,400
12% debentures			(58,000)
			396,000
Issued share capital			250,000
Current cost reserve	(6)		75,000
Retained earnings			71,000
			396,000

Required:

(a) Explain what each of the items numbered 1–6 represents and the purpose of each.
(b) What do you consider to be the benefits to users of providing current cost information?

Question 3

The statements of financial position of Parkway plc for 20X7 and 20X8 are given below, together with the income statement for the year ended 30 June 20X8.

	Statement of financial position					
		20X8			*20X7*	
	£000	*£000*	*£000*	*£000*	*£000*	*£000*
Non-current assets	Cost	Depn	NBV	Cost	Depn	NBV
Freehold land	60,000	—	60,000	60,000	—	60,000
Buildings	40,000	8,000	32,000	40,000	7,200	32,800
Plant and machinery	30,000	16,000	14,000	30,000	10,000	20,000
Vehicles	40,000	20,000	20,000	40,000	12,000	28,000
	170,000	44,000	126,000	170,000	29,200	140,800
Current assets						
Inventory		80,000			70,000	
Trade receivables		60,000			40,000	
Short-term investments		50,000			—	
Cash at bank and in hand		5,000			5,000	
		195,000			115,000	
Current liabilities						
Trade payables		90,000			60,000	
Bank overdraft		50,000			45,000	
Taxation		28,000			15,000	
Dividends		15,000			10,000	
		183,000			130,000	
Net current assets			12,000			(15,000)
			138,000			125,800
Financed by						
Ordinary share capital			80,000			80,000
Share premium			10,000			10,000
Retained profits			28,000			15,800
			118,000			105,800
Long-term loans			20,000			20,000
			138,000			125,800

Statement of comprehensive income of Parkway plc for the year ended 30 June 20X8

	£000
Sales	738,000
Cost of sales	620,000
Gross profit	118,000

Notes

1 The freehold land and buildings were purchased on 1 July 20X0. The company policy is to depreciate buildings over 50 years and to provide no depreciation on land.

2 Depreciation on plant and machinery and motor vehicles is provided at the rate of 20% per annum on a straight-line basis.

3 Depreciation on buildings and plant and equipment has been included in administration expenses, while that on motor vehicles is included in distribution expenses.

4 The directors of Parkway plc have provided you with the following information relating to price rises:

	RPI	*Inventory*	*Land*	*Buildings*	*Plant*	*Vehicles*
1 July 20X0	100	60	70	50	90	120
1 July 20X7	170	140	290	145	135	180
30 June 20X8	190	180	310	175	165	175
Average for year ending 30 June 20X8	180	160	300	163	145	177

Required:

(a) Making and stating any assumptions that are necessary, and giving reasons for those assumptions, calculate the monetary working capital adjustment for Parkway plc.

(b) Critically evaluate the usefulness of the monetary working capital adjustment.

Question 4

Raiders plc prepares accounts annually to 31 March. The following figures, prepared on a conventional historical cost basis, are included in the company's accounts to 31 March 20X5.

1 In the income statement:

		£000	*£000*
(i)	Cost of goods sold:		
	Inventory at 1 April 20X4	9,600	
	Purchases	39,200	
		48,800	
	Inventory at 31 March 20X5	11,300	37,500
(ii)	Depreciation of equipment		8,640

2 In the statement of financial position:

		£000	*£000*
(iii)	Equipment at cost	57,600	
	Less: Accumulated depreciation	16,440	41,160
(iv)	Inventory		11,300

The inventory held on 31 March 20X4 and 31 March 20X5 was in each case purchased evenly during the last six months of the company's accounting year.

Equipment is depreciated at a rate of 15% per annum, using the straight-line method. Equipment owned on 31 March 20X5 was purchased as follows: on 1 April 20X2 at a cost of £16 million; on 1 April 20X3 at a cost of £20 million; and on 1 April 20X4 at a cost of £21.6 million.

	Current cost of inventory	*Current cost of equipment*	*Retail Price Index*
1 April 20X2	109	145	313
1 April 20X3	120	162	328
30 September 20X3	128	170	339
31 December 20X3	133	175	343
31 March/1April 20X4	138	180	345
30 September 20X4	150	191	355
31 December 20X4	156	196	360
31 March 20X5	162	200	364

Required:

(a) Calculate the following current cost accounting figures:
  (i) The cost of goods sold of Raiders plc for the year ended 31 March 20X5.
  (ii) The statement of financial position value of inventory at 31 March 20X5.
  (iii) The equipment depreciation charge for the year ended 31 March 20X5.
  (iv) The net statement of financial position value of equipment at 31 March 20X5.

(b) Discuss the extent to which the figures you have calculated in (a) above (together with figures calculated on a similar basis for earlier years) provide information over and above that provided by the conventional historical cost statement of comprehensive income and balance sheet figures.

(c) Outline the main reasons why the standard setters have experienced so much difficulty in their attempts to develop an accounting standard on accounting for changing prices.

Question 5

The historical cost accounts of Smith plc are as follows:

Smith plc Statement of comprehensive income for the year ended 31 December 20X8

	£000	*£000*
Sales		2,000
Cost of sales:		
Opening inventory 1 January 20X8	320	
Purchases	1,680	
	2,000	
Closing inventory at 31 December 20X8	280	
		1,720
Gross profit		280
Depreciation	20	
Administration expenses	100	
		120
Net profit		160

Statement of financial position of Smith plc as at 31 December 20X8

		20X7		20X8
Non-current assets		£000		£000
Land and buildings at cost		1,360		1,360
Less aggregate depreciation		(160)		(180)
		1,200		1,180
Current assets				
Inventory	320		280	
Trade receivables	80		160	
Cash at bank	40		120	
	440		560	
Trade payables	200		140	
		240		420
		1,440		1,600
Ordinary share capital		800		800
Retained profit		640		800
		1,440		1,600

Notes

1 Land and buildings were acquired in 20X0 with the buildings component costing £800,000 and depreciated over 40 years.
2 Share capital was issued in 20X0.
3 Closing inventories were acquired in the last quarter of the year.
4 RPI numbers were:

Average for 20X0	120
20X7 last quarter	216
At 31 December 20X7	220
20X8 last quarter	232
Average for 20X8	228
At 31 December 20X8	236

Required:

(i) Explain the basic concept of the CPP accounting system.

(ii) Prepare CPP accounts for Smith plc for the year ended 20X8.

The following steps will assist in preparing the CPP accounts:

(a) Restate the statement of comprehensive income for the current year in terms of £CPP at the year-end.

(b) Restate the closing statement of financial position in £CPP at year-end, but excluding monetary items, i.e. trade receivables, trade payables, cash at bank.

(c) Restate the opening statement of financial position in £CPP at year-end, but including monetary items, i.e. trade receivables, trade payables and cash at bank, and showing equity as the balancing figure.

(d) Compare the opening and closing equity figures derived in (b) and (c) above to arrive at the total profit/loss for the year in CPP terms. Compare this figure with the CPP profit calculated in (a) above to determine the monetary gain or monetary loss.

(e) Reconcile monetary gains/loss in (d) with the increase/decrease in net monetary items during the year expressed in £CPP compared with the increase/decrease expressed in £HC.

* Question 6

Aspirations Ltd commenced trading as wholesale suppliers of office equipment on 1 January 20X1, issuing ordinary shares of £1 each at par in exchange for cash. The shares were fully paid on issue, the number issued being 1,500,000.

The following financial statements, based on the historical cost concept, were compiled for 20X1.

Aspirations Ltd

Statement of comprehensive income for the year ended 31 December 20X1

	£	£
Sales		868,425
Purchases	520,125	
Less: Inventory 31 December 20X1	24,250	
Cost of sales		495,875
Gross profit		372,550
Expenses	95,750	
Depreciation	25,250	
		121,000
Net profit		251,550

Statement of financial position as at 31 December 20X1

	Cost	*Depreciation*	
Non-current assets	£	£	£
Freehold property	650,000	6,500	643,500
Office equipment	375,000	18,750	356,250
	1,025,000	25,250	999,750
Current assets			
Inventories		24,250	
Trade receivables		253,500	
Cash		1,090,300	
		1,368,050	
Current liabilities		116,250	
	1,251,800		
Non-current liabilities		500,000	751,800
			1,751,550
Issued share capital			
1,500,000 £1 ordinary shares			1,500,000
Retained earnings			251,550
			1,751,550

The year 20X1 witnessed a surge of inflation and in consequence the directors became concerned about the validity of the revenue account and statement of financial position as income and capital statements. Index numbers reflecting price changes were:

Specific index numbers reflecting replacement costs

	1 January 20X1	*31 December 20X1*	*Average for 20X1*
Inventory	115	150	130
Freehold property	110	165	127
Office equipment	125	155	145
General price index numbers	135	170	155

Regarding current exit costs

Inventory is anticipated to sell at a profit of 75% of cost.

The value of assets at 31 December 20X1 was

	£
Freehold property	640,000
Office equipment	350,000

Initial purchases of inventory were effected on 1 January 20X1 amounting to £34,375; the balance of purchases was evenly spread over the 12-month period. The non-current assets were acquired on 1 January 20X1 and, together with the initial inventory, were paid for in cash on that day.

Required:
Prepare the accounts adjusted for current values using each of the three proposed models of current value accounting: namely, the accounting methods known as replacement cost, general (or current) purchasing power and net realisable value.

Question 7

Antonio Rossi set up a part-time business on 1 November 2004 buying and selling second-hand sports cars. On 1 November 2004 he commenced business with $66,000 which he immediately used to purchase ten identical sports cars costing $6,600 each, paying in cash. On 1 May 2005 he sold seven of the sports cars for $8,800 each receiving the cash immediately. Antonio estimates that the net realisable value of each sports car remaining unsold was $8,640 as at 31 October 2005.

The replacement cost of similar sports cars was $6,800 as at 1 May 2005 and $7,000 as at 31 October 2005, and the value of a relevant general price index was 150 as at 1 November 2004, 155 as at 1 May 2005 and 159 as at 31 October 2005.

Antonio paid the proceeds from the sales on 1 May 2005 into a special bank account for the business and made no drawings and incurred no expenses over the year ending 31 October 2005.

Antonio's accountant has told him that there are different ways of calculating profit and financial position and has produced the following figures:

Current purchasing power accounting Profit and Loss Account for the year ended 31 October 2005

	$
Sales	63,190
less Cost of sales	48,972
	14,218
Loss on monetary item	(1,590)
CPP net income	12,628

Balance sheet as at 31 October 2005

Assets	$
Inventory	20,988
Cash	61,600
	82,588
Financed by:	
Opening capital	69,960
Profit for the year	12,628
	82,588

Current cost accounting Profit and Loss Account for the year ended 31 October 2005

Historical cost profit	15,400
less Cost of sales adjustment	1,400
Current cost income	14,000

Balance sheet as at 31 October 2005

Asset	$
Inventory	21,000
Cash	61,600
	82,600
Financed by:	
Opening capital	66,000
Current cost reserve	2,600
Profit for the year	14,000
	82,600

Required:

(a) Prepare Antonio's historical cost profit and loss account for the year ended 31 October 2005 and his balance sheet as at 31 October 2005.

(b) (i) Explain how the figures for Sales and Cost of sales were calculated for the current purchasing power profit and loss account. You need not provide detailed calculations.

(ii) Explain what the 'loss on monetary item' means. In what circumstances would there be a profit on monetary items?

(c) (i) Explain how the 'cost of sales adjustment' was calculated and what it means. You need not provide detailed calculations.

(ii) Identify and explain the purpose of any three other adjustments which you might expect to see in a current cost profit and loss account prepared in this way.

(d) State, giving your reasons, which of the three bases gives the best measure of Antonio's financial performance and financial position.

(*The Association of International Accountants*)

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