

# I

## THE PROBLEM AND ITS PREMISE : PRICES POLICY AND HISTORIC COST ACCOUNTING

### Introduction

In January, 1971, an economist made a forecast about the use of 'incomes policies' as a means of containing inflation in the environment of the 1970s : "I confidently forecast an incomes policy with teeth well before the decade is half over. I would guess we will see some lively international competition in the design of effective systems, as the problem we are discussing is indeed a world-wide one"<sup>1</sup>. By the end of 1975 the prediction had come true for most of the industrialised countries of the West, with the exception of West Germany<sup>2</sup>. As to their design, all of them have been concerned with containing cost-push inflation through some variations of cost-justifying price increases and reinforcing these by profit controls. Under the U.K. Price Code, basically manufacturers were entitled to raise prices only in proportion to increases in certain specified 'allowable' costs per unit of output, after disallowing part of increased labour costs, and provided that any such price increases did not mean that their 'net profit margins' would move above certain 'reference levels'. Attention has been particularly focussed on the prices and profits of larger enterprises, while using uncritically the existing accounting systems as the information base for administering the controls by the Price Commission. A major part of this book is concerned with the problem of using conventional accounting methodology as a basis of operating the prices policy during a regime of rising prices and taxes based on accounting profit.



## Outline of the Study

The materials in this book has been arranged in the following sequence. The remaining portion of this chapter contains a formal introduction to the problem and the hypothesis that has been investigated along with a background description of historic cost accounting and related concepts and issues.

Chapter 2 describes the various administrative and substantive provisions of the U.K. Price Code as it had been operated during Stages 2-5 under the heading of Counter Inflation Measures : The Price Code. Important research questions are raised, empirical evidences of which are provided in subsequent chapters.

Chapter 3 presents "A Review of the Literature on the Inter-related Effects of High Rates of Inflation, Price Control and Taxation on Company Profitability and Financial Viability". This chapter actually formed the basis for the statement of the problem and the hypothesis.

Chapter 4 is entitled "Inflation Theories, Wage-Price Controls and the Behaviour of Relative Price Changes". It is devoted to a brief description of economic theories of inflation and traces the actual behaviour of relative input-output price increases during the period of control in order to establish the fact that such counter inflation measures did work to hold down the rates of output price increases.

Chapter 5 contains the development and use of a total corporate model ( computer based ) to simulate the operation of the "allowable cost pricing" rules under alternative "scenarios" of rising relative prices and/or growth. Besides demonstrating the inter-connection between accounting profit and earnings measured in cashflows under the regime of prices policies, result of the expost forecast made on the manufacturing sector raised serious doubts about the quality of micro as well as macro planning-forecasting framework used in the past. The overall aim of this chapter is to highlight the development in computer based planning-budgeting system which makes it possible to anticipate the outcome of certain policy measures provided the interrelationships between the variables are correctly recognised.

Chapter 6 deals with analysis of accounts of a sample of companies according to the interfacing cashflow model. Aggregate



data published by Department of Trade and Industry on the financial performance of the company sector (non-financial) is also analysed on the same basis. Results of the analysis are presented in the frame of comparative statics to measure the impact of price controls on company finances. The same approach has also been used to present the contrasting accounting vs. cashflow performance of some of the enterprises/corporations from both the Public and Private sector in Bangladesh.

In Chapter 7 the level of analysis has been raised to the macro-economic planning forecasting level. The overall problem of resource allocation and their magnitudes have been analysed within the "flow of fund" approach. Attempt has also been made to use the approach to trace the transfer of resources between public, private and foreign sectors in Bangladesh and highlight the inter-relationship between financial performance of public enterprises and aggregate financial forecasting. The case of Bangladesh Power Development Board is analysed and some suggestions are made regarding its financing. Chapter 8 deals with these matters on Bangladesh.

Chapter 9 presents the summary and conclusions of the study.

### **A Statement of the Problem**

By April 1977, the U. K. economy had had four years of price control with record levels of inflation among the industrialised nations of the world. This fact indicates the limited role that price controls can play in containing inflation. "Price control is unlikely to achieve much more than a change in expectations, especially those of consumers and trade unions, in the short run only"<sup>3</sup>. On the other hand if the limited success in controlling inflation is achieved through preventing industry from passing cost increases on in higher prices, it is bound to result in a reduction of the 'price-cost margins'. It is well known that difficult problems are encountered in calculating costs of products or services in industry; therefore, the appropriate nature and magnitude of the erosion in 'margins' would be intimately connected with the problem of identifying and measuring costs. Although "it has always remained a problem of how far the cost of any product should be identified and how one should relate the price of product to that cost"<sup>4</sup>, the Price Code was designed to operate on the basis of historic cost or conventional accounting methods. This was pursued with complete disregard for the fundamental methodological deficien-



cies of the conventional accounting system which not only left certain necessary returns to factors of production unmeasured in the accounting process, but also failed to deal with the cost of working capital and replacement of fixed assets arising out of rapidly rising prices<sup>5</sup>. Omission of these cost items in determining product prices resulted in serious underpricing of sales which prevented companies from recouping the expenditure incurred in cash. This was highlighted in the so-called crisis in cashflow or liquidity in the company sector. Where as conventional accounting profit continued to be overstated in an illusory way<sup>6</sup>, it is a perfectly logical outcome of the double-entry book-keeping which requires that costs which are actually incurred but neither reflected in product prices nor charged against periodic revenue, are automatically 'capitalised' and shown as income which accountants termed as "holding gains".

Although concern had been expressed about the impact of inflation on conventional accounting measures of company performance as early as in May, 1952, most of the earlier emphasis was placed on some form of "current purchasing power" adjustments for the purpose of financial reporting as part of the stewardship obligations on management<sup>7</sup>. In the early 1970s, the hypothesis that the application of principles of 'conventional' accounting leads to a consistent overstatement of earnings under situations of growth and/or inflation was put on a more rigorous basis<sup>8</sup>. Prior to that, arguments mostly centred around the distinction between 'Profitability' and 'Liquidity' so that for the purpose of enterprise income measurement these two concepts were considered divergent and their outcome could only be identical by chance. It is possibly for this reason that neither the government nor industry in general took inflation accounting seriously until the publication of the Sandilands Report in September, 1975<sup>9</sup>. This report made some clear recommendations on the use of "Current Cost Accounting" for all purposes of the Price Code. While the accounting profession in the U. K. was continuing what appeared to be an unending debate on the final form of inflation accounting standards, the government partially implemented two of the recommendations of the Sandilands Report during the August 1976 relaxation in the Code. Prior to that there was nothing to prevent situations in which high conventional profits could be associated with negative real earnings measured on a cash flow basis.



Some indication of the orders of magnitude of deteriorating corporate financial performance have been provided by a number of studies at macro level<sup>10</sup>. All of these studies found an unprecedented deterioration in real profitability beyond any expectation of either the long-term or cyclical patterns and strongly suggested that "the operation of tight price controls in the United Kingdom have prevented companies from passing on the abnormal cost pressures smoothly in their selling prices"<sup>11</sup>. Rapidly growing numbers of company failures have been cited as evidence of the sharply reduced financial performance of companies in all of these studies.

In order to measure the inter-related effects of inflation, price control, historic cost accounting and taxes on companies real profitability and financial viability, this study has been conducted on the methodologies of cash flow accounting principally advocated by Professor Lawson and Professor Lee<sup>12</sup>. It is not only that cash flow accounting correctly captures relative price changes affecting individual enterprises and, therefore, succeeds in measuring periodic performance in terms of periodic purchasing power, but that it is based on sound economic principles underlying modern valuation theories<sup>13</sup>. For the purpose of this thesis we have argued that real profitability and financial viability of companies is dependent on their ability to generate sufficient cash from their production and trading activities not only to cover the cost of replacement of used up capacities but also to compensate the investors of capital according to their expectations. The following presentation shows why such a criterion of profitability and financial viability was not satisfied, as has already been indicated in the studies referred to above.

The following brief presentation of the cash flow accounting system is provided at the outset to illustrate the nature of the problem.

'Conventional net profit' for any period  $j$ ,  $CNP_j$ , is defined as :

$$CNP_j = d_j - (a_{j-1} + b_j - a_j) - L_j - F_j \quad (1)$$

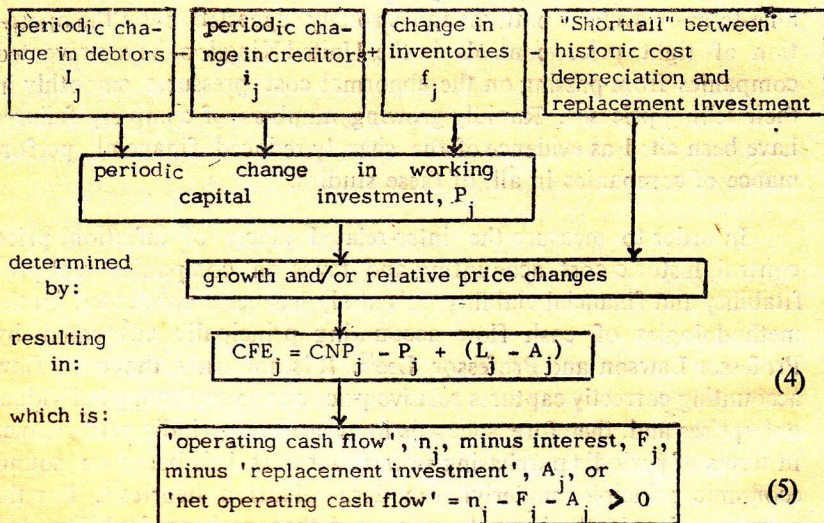
A juxtaposition of the above in terms of earnings measured according to cash flow accounting,  $CFE_j$ , is given by :

$$CFE_j = k_j - h_j - A_j - F_j \quad (2)$$



Subtracting equation (2) from equation (1) provides the constituents of the difference between the two measures of accounting which is :

$$(d_j - k_j) - (b_j - h_j) + (a_j - a_{j-1}) - (L_j - A_j) \quad (3)$$



- where :
- $a_j$  = value of inventory at the end of period  $j$
  - $b_j$  = revenue expenditure invoiced in period  $j$
  - $c_j = (a_{j-1} + b_j - a_j)$  cost of sales in period  $j$
  - $d_j$  = sales invoiced in period  $j$
  - $k_j$  = cash collected from customers in period  $j$
  - $h_j$  = cash paid to suppliers in period  $j$
  - $F_j$  = interest charged and paid in period  $j$
  - $L_j$  = historic cost depreciation charged in period  $j$

Two terms on the right hand side of equation (4),  $P_j$  and  $(L_j - A_j)$  represent cost omission which results in under-pricing of sales over and above the cost absorption imposed by the Price Code due to 'allowable cost' pricing. At this stage, given the U.K. rates of inflation, it was postulated that even the condition of partial financial viability presented in equation (5) might not have been satisfied, (because there were taxes and dividends to be paid in cash).



Once these constituents of omitted costs are brought into account, then the corrected  $\overset{\wedge}{\text{CNP}}_j$  will be logically less than  $\text{CNP}_j$ . In other words,  $\text{CFE}_j < \overset{\wedge}{\text{CNP}}_j$  will emerge. Dividing both sides of this inequality by sales,  $d_j$ , we obtain :

$$\frac{\text{CFE}_j}{d_j} < \frac{\overset{\wedge}{\text{CNP}}_j}{d_j}$$

The ratio on the right hand side is 'Controlled Net Profit Margin' which, according to the conservative estimates of the Price Commission, had been 'eroded' by about 40% over two-and-a-half years since the imposition of the Price Code in April 1973. If the conventional margin had been squeezed by the magnitude mentioned above, during a period of high inflation, then it inevitably follows that corresponding cash flow margin was pushed down towards zero or negative. More specifically, there was nothing either in historic cost accounting or in the Price Code to prevent conditions wherein  $\frac{\text{CNP}_j}{d_j} > 0$  and  $\frac{\text{CFE}_j}{d_j} < 0$  existed side by side until the August 1976 relaxations in the Code.

This situation could exist for the following reasons :

As already indicated in the earlier sections of this chapter, one of the major elements of the shortfall between  $\text{CNP}_j$  and  $\text{CFE}_j$  is working capital ( $P_j$ ) size of which depends upon real turnover growth and the rates of change of a firm's costs and selling prices. The other element is depreciation shortfall,  $(L_j - A_j)$ , which basically depends on the rate of increase in fixed asset price and this is expected to move broadly in line with the general level of increase in output prices in the economy<sup>14</sup>.

Given the high rates of cost and price increases experienced in the U.K. during the period of price control, it is virtually axiomatic that a significant proportion of the net profit margin  $(\text{CNP}_j)/d_j$  had been pre-empted by these two factors,  $P_j$  and  $(L_j - A_j)$ . The magnitude of the pre-emption could be so high that it made the Price Code, in association with the tax system almost confiscatory in design.



It was therefore, postulated that :

In inflationary conditions price controls cast in terms of conventional accounting methodology can have very serious adverse effects on companies finances and significantly raises the probability of corporate bankruptcy.

As has been shown above, this is caused by certain omissions of costs—cost of working capital and depreciation shortfall—under a system of historic cost based product pricing and income calculation.

A systematic explanation of how these cost omissions resulted in underpricing of sales and erosion in real margins is presented below.

### **Historic Cost Accounting, Underpricing and Overstatement of Profit**

Historic cost accounting is the generic term used to describe the multiplicity of accounting practices at present used by the majority of companies as the basis of their accounts<sup>15</sup>. It is this characteristic of historic cost accounting that assets are measured in the balance sheet by reference to their costs, subject to a convention that where the “value to the business” in the case of fixed assets or net realisable value in the case of current assets is lower, these figures should be used. In the large majority of cases net assets are measured by reference to their original purchase price in monetary terms or historic cost, and this characteristic has given its name to the system as a whole<sup>16</sup>.

An accounting system does not itself create resources or income, but is intended to measure the extent to which resources or income have been created by the activities of an enterprise. Accounting measurement involves a continuous process reflecting the continuous nature of production and trading activities that go on during the life time of an entity. Periodic reporting of the results to interested parties is aimed at providing a basis for estimating the growth in net assets which is described as profit. “Profit for the year is regarded as any gain or increase in net assets arising during the year which may be distributed while maintaining the amount of the shareholders’ interest in the company at the beginning of the year, which is regarded as the company’s capital”<sup>17</sup>. In arriving at the profit



figure, the accounting profession recognises four so-called fundamental accounting concepts as having general acceptability<sup>18</sup>. These are : the 'going concern' concept; the 'accruals' concept; the 'consistency' concept ; the concept of 'prudence'. Profit or loss for the year (or any period) is determined in relation to costs and is arrived at after matching against revenue received during the year, the historic costs incurred in generating that revenue, in accordance with the 'accruals' concept.

The application of this concept, in practice, is likely to give rise to difference of opinion as to how historic costs incurred should be matched against revenue, since it is not clear how particular expenditure and revenue should be matched. Subjectivity aside, conventional accounting bases, developed in order to standardise as far as possible the treatment of certain items, become wholly unsuitable for measuring profit realistically under conditions of growth and/or relative price changes. That means, in addition to the possibilities of significant variation in treatment, and hence variations in resulting profit figures, there are strong possibilities that the profit figure can be gravely misconstrued by the two factors just mentioned, which are the very real conditions in which an enterprise operates. Two areas of the profit and loss account, depreciation and cost of stock, have been a subject of a great deal of deliberation for at least the last 50 years, without major agreements amongst accountants—professional as well as academics.

The concept of cost and value are economic concepts ; therefore the preferred basis of measuring them should be economics rather than accounting in circumstances where conflicting situations apparently arise. Although the forces of rising price levels and increasing complexity of management have stimulated thought about the relative roles of value and cost in accounting, the issue is by no means resolved. "Since monetary stability does not rule out changes in *relative* prices in a free enterprise economy, the traditional role of costs and value in accounting would continue to be debated<sup>19</sup>", even if the problems of inflation accounting were somehow resolved. However, in the wake of the latter issue the following have come to be recognised of the way in which historic cost accounting has



lost its usefulness in measuring costs in conditions of high and accelerating inflation<sup>20</sup> :

- (a) not all the balance sheets reveal the real value of all the assets ;
- (b) depreciation is inadequate to replace the assets consumed during the year ;
- (c) the charge for the cost of stock consumed is inadequate to replace it, because stock is charged at the cost of purchases, not at the cost of replacement.

In view of this it was recommended that Current Cost Accounting should become the accounting basis on which the government's price control policy should operate<sup>21</sup>, and this had been partially reflected in the August 1976 relaxation in the Price Code. Until then, companies had been absorbing entirely the omitted cost due to the faulty accounting method in their real margins, along with the burden of cost absorption imposed by the provisions of the allowable cost regime of the Price Code. It would be helpful to analyse and discuss the nature and implications of cost omission on account of depreciation and stock in particular.

*Depreciation* : Under historic cost accounting, the cost of purchasing fixed assets which are expected to have a useful life of more than one year is not charged in full to the profit and loss account for the year in which they are purchased. There are alternative conventions for calculating the appropriate proportion of depreciation to be charged, such as straight line, reducing balance, or annual capital charge. The most common is the 'straight line' method, under which the total amount to be depreciated is divided by the number of years of estimated useful life.

'Depreciation Policy' or, more precisely, the sequence of depreciation charges entered in a company's profit and loss account, is based, first, upon subjective estimates of assets' lives and, second, upon a somewhat arbitrary allocation of their acquisition costs over the succession of accounting periods enjoying those assets. Furthermore, the world's accountancy bodies have yet to find a definitive solution to the question of whether depreciation charges should relate to historic, current or replacement cost<sup>22</sup>.



However, it is widely accepted that in conditions of continuing inflation, historic cost depreciation will seriously understate the full cost of an asset and its use to an enterprise measured in terms of the purchasing power of the period in which the asset was acquired. The following table provides an illustration of the effect of changing prices on historic cost depreciation and fixed asset valuation in the balance sheet.

EFFECT OF CHANGING PRICES ON BALANCE SHEET

	Stable Prices End Year 1974 entries		50% Price Rise during 1973 End Year 1974 entries	
	1 Company A	2 Company B	3 Company A	4 Company B
Fixed Assets	100	100	100	150
Depreciation @ 10% p.a.	20	10	20	15
Net	80	90	80	135

The table shows a simple comparison between the entries in respect of fixed assets in the end year 1974 historic cost balance sheets of two companies, A & B, which purchased identical fixed assets at the beginning of 1973 and 1974 respectively.

Columns 1 and 2 show the entries in the historic cost balance sheet for the end of 1974 when there had been no change in the price of the asset. Columns 3 and 4 show what happens if the price of assets of the type purchased by both companies increases by 50% during 1973 after Company A buys its assets, but before Company B makes its acquisition. The nature of the escaped cost and distortions arising thereby in profit calculations of the two companies may be observed in Columns 3 and 4. While the depreciation charge for Company A remained constant at its position under stable prices, the depreciation charge for Company B went up by 50%. If there were no other costs and if product prices were fixed on the same mark-up on historic cost depreciation, Company A's price would have been lower by 50% compared with Company B's prices in 1974. The relative under-pricing would result because the replacement cost of the used



up facility would be 50% higher than the historic cost depreciation charged in product cost. If we assume that the mark-up was 50%, then the entire sales receipts of Company A in 1974 would be absorbed in replacement investment.

A more fundamental issue that is involved with depreciation is related to the recognition of *cost of capital* in computing periodic depreciation charges. It has been suggested that depreciation methods, which recognises cost of capital (interest) are attempts to discount the values of successive doses of inputs in a meaningful way<sup>23</sup>. In fact, it has been argued that "any depreciation policy based upon acquisition cost which does not take account of interest charges on the capital deployed in the asset will understate the full cost of the latter—even in the complete absence of inflation"<sup>24</sup>.

Some orders of magnitude of the shortfall of historic cost depreciation may be provided by comparing its level with the levels that may be derived from an economic model for computing an annual depreciation charge. To give effect by means of a depreciation policy to the full cost,  $A_0$ , of an asset required at end-year 0, with an expected life of  $W$  years, it is necessary to make a succession of depreciation charges  $C_1, C_2, \dots C_w$ , having a present value of  $A_0$  and therefore satisfying the following equation :

$$A_0 = \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \dots + \frac{C_w}{(1+r)^w}$$

where  $r$  is the weighted average cost of capital to the enterprise in question.

If  $C_1 = C_2 = \dots = C_w$ , the above equation reduces to

$$A_0 = C \left[ \frac{1 - (1+r)^{-w}}{r} \right]$$

Therefore,  $C = A_0 \left[ \frac{r}{1 - (1+r)^{-w}} \right] \dots \dots \dots X$

By comparison, a conventionally-calculated fixed instalment charge,  $L_j$ , based upon  $A_0$ , would be given by :  $L_j = \frac{A_0}{w}$ . To obtain an indication of the extent to which  $L_j$  above understates the value



of the annual capital charge,  $C$ , satisfying eq. x, it is necessary to evaluate these two equations with ranges of values for  $r$  and  $W$ . The following table and accompanying notes illustrate the relationship between  $L_j$  and  $A_j$ , wherein  $A_j$  is assumed to be represented in *annual capital charge*  $C$ .

ANNUAL CAPITAL CHARGE,  $C$ , AS A FUNCTION OF ASSET LIFE,  $W$ , AND COST OF CAPITAL,  $r$ .<sup>25</sup>

$\frac{r}{W}$	0.01	0.05	0.10	0.15	0.20	$\frac{A}{W}$ O
1	1010	1050	1100	1150	1200	1000
5	206	231	264	298	334	200
10	106	130	163	199	239	100
15	72	96	131	171	214	67
20	55	80	117	160	205	50

Notes : (I)  $A_0$  is an assumed asset acquisition cost of £ 1,000.

(II)  $A_0/W$  is annual depreciation calculated on a fixed instalment basis.

(III) The annual capital charge,  $C$ , is given by :

$$C = A_0 \left[ \frac{r}{1 - (1+r)^{-W}} \right]$$

Taking a particular example from the table ; when a company's weighted average cost of capital ( $r$ ) is 0.05 (5% per year)—possibly a reasonable value in conditions of zero inflation—and the expected life ( $W$ ) of an asset is 10 years, the annual capital charge exceeds conventional depreciation ( $L_j$ ) by 30%, i.e.  $(130 - 100) \div 100$ . Assuming that inflation is anticipated by lenders and to some degree is embodied in the value of  $r$ , the discounting rate, the extent to which historic cost depreciation is understating the true cost of replacement capital expenditure during a period of high inflation could be very large.

In the fifties and sixties, under a relatively far lower and steady rate of price inflation, it was often pointed out that the amortisation funds set aside by growing firms exceeded their replacement requirement<sup>26</sup>. In the context of macro-economic planning the problem of



“oversaving” was viewed with concern for the possible deflationary effects of such funds. Recently, utilising the same set of data and a similar approach, but with a higher level of inflation (16%), it was shown that a rate of inflation of the current order of magnitude would cause the amortisation funds of most industries to be less than their replacement requirements. It was commented that instead of “surplus” fund, industries would have to face the potentially more serious problem of discovering means through which they might finance their “deficits”.<sup>27</sup>

*The Cost of Stock* : ‘Stock’ or ‘Inventory’ is a general term used to cover not only stock of raw materials and components, but also work in progress and finished goods awaiting sale. The matching of cost of stock against the revenue earned during a period is a difficult area of accounting for which conventional methods have been developed. The most commonly used convention in this country is the ‘First In First Out’ (FIFO) convention, by which it is assumed that the units of stock consumed during the year are those which have been longest on hand. Although FIFO is the most commonly used convention in this country, there are a significant number of companies using alternative conventions, such as Last In First Out (LIFO) and the base stock method. In the U.S.A. the tendency to use (LIFO) has increased sharply in recent years<sup>28</sup>. A survey last year by the American Institute of CPA showed that 52% of 600 industrial and commercial companies sampled used LIFO accounting in 1975 as against 25% using that method in 1973. It may, however, be pointed out that whatever valuation policies are used, no convention has been developed concerning the level of physical stock which companies should carry. This contrasts with inventory theories which basically seek to minimise the cost of providing and maintaining an inventory. Given this and also the existence of various methods of computing accelerated depreciation charges, one could argue that what used to be done for pricing purposes might differ from what was done in the company accounts.

Companies also vary widely with respect to the average time for which stock is held. Whatever the average time for this, the FIFO convention leads to the cost of stock consumed in the year (or any period) being charged to the profit and loss account at the purchase



STOCK APPRECIATION, ESCAPED COST AND PRICE CONTROLS—NUMERICAL EXAMPLE  
 COMPANY A—COST INCREASES OF 10% PER PERIOD (e.g. quarters)

Company A	1		2		3		4	
	Units	£	Units	£	Units	£	Units	£
Opening inventory	—	—	100	75	100	82.50	100	90.75
Variable costs	1000	750	1000	825	1000	907.5	1000	998.25
Fixed costs		250		275		302.5		332.25
Closing Inventory	1000	1000	1100	1175	1100	1292.5	1100	1421.75
A. Cost of sales	100	75	100	82.5	100	90.75	100	99.825
B. Cost incurred	900	£ 925	1000	£1092.5	1000	£1201.75	1000	£1321.925
B minus A (Escaped cost)		£1000		£ 1100		£ 1210		£ 1331
Cost of Sales per unit		£ 75		£ 7.5		£ 8.25		£ 9.075
Sales Price		1.028		1.092		1.202		1.322
C. Sales Revenue		1.233		1.310		1.441		1.585
D. Profit Margin		110		1310		1441		1585
E. Cash Margin	16.6%	185	16.6%	2175	16.6%	239.25	16.6%	263.075
C-B	9.9%	110	16.0%	210	16.0%	231.00	16.0%	254.000
F. Cost Absorption								
D-E		£ 75		£ 7.5		£ 8.25		£ 9.075

Further assumptions :

- 1) All cost increases were allowable (i.e. there were no other costs to be absorbed e.g. productivity deductions.)
- 2) There were no delays in cost-pass-throughs
- 3) Period 2 Price =  $\frac{\text{Period 2 unit cost of sales}}{\text{Period 1 unit cost of sales}} \times \text{Period 1 price}$  & so on.



cost of the oldest stock on hand, which may be anything from a few weeks to some years old<sup>29</sup>. The mechanics and determinants of working capital investment, of which stock appreciation is the principal element, have been presented elsewhere<sup>30</sup>. However, the preceding illustration indicates the nature of cost omission that occurs under the conventional accounting system in periods of rising prices.

*Stock Appreciation and Price Controls* : The company in question commences business at the beginning of Period 1. The company's sales volume and output level remains at a constant level of 1000 units and maintains an inventory, valued at a variable cost on an FIFO basis, representing 10% of physical output and sales. Costs are assumed to increase at 10% per annum.

As the comparison between lines A and B indicate, the cost of sales recorded in the company's profit and loss account will, under the assumption of continuing cost increases, understate the cost actually incurred in every period. This periodic understatement of cost actually incurred is matched by the increase in the value of stocks (stock appreciation) over the individual period in question. The accounting profit will be spuriously inflated by the amount of the omitted cost, but will not be matched by a corresponding cash inflow.

Cost omission or absorption in the same manner would arise if the increase in stock values were due to volume increase, some indication of which may be obtained from Period I data in the example. It was also demonstrated that if two companies were, apart from their inventory valuation policies, in all other respects identical, the company whose unit inventory values and/or its volume were higher would generally have a lower 'cost of sales' and therefore a generally higher level of conventionally-calculated profit<sup>31</sup>.

The discussion and analysis presented so far lead to the following propositions :

- (a) That the 'erosion' of pre-tax margins mentioned in page 7 and discussed in Chapter 3 based on Price Commission reports, gave only some broad indications of the phenomenon. Allowable cost increases computed in accordance with historic cost accounting resulted in significant cost omissions and hence in the underpricing of sales.



Once necessary corrections are made for these omitted costs real margins would be far lower than was reported to the Price Commission. In other words, the level of 'erosion' would be far higher and consequently the post-tax position would tend to be negative.

- (b) Payments of necessary dividends on equity capital; it may be postulated, resulted in distribution of capital back to their owners; therefore, were in contravention of the concept of the profit calculus on which historic cost accounting is based. For that purpose, it may be argued, government and consumers have also contributed to the process to the detriment of financial viability of the business sector of the economy.

### Impact of Taxation and Tax Allowances on Financial Viability

Through a system of equations it had been demonstrated that the pre-tax relationship between pre-depreciation profit ( $d_j - c_j$ ) and operating cash flow ( $k_j - h_j$ ) was synonymous with the relationship which was derived in a no-tax situation<sup>32</sup>. Having said this it would be worthwhile to describe some of the positive and negative determinants of periodic cash payments arising out of the regime of the U. K. corporation taxes, capital allowances and *stock appreciation relief*.

**Time Lag :** There is, on average, a time lag of 15 months between the business year-end to which taxes have been charged and the date on which such taxes are actually paid. Thus, the average tax payable on the profit of year  $j$  is actually paid in the year  $j+1$ . This time lag has some cash flow implications during a period of rapid inflation, as the tax charge is based on conventionally measured profit,  $e_j$ , which goes on increasing with a corresponding decrease in  $n_j$ , that is, when  $e_j > n_j$ ,  $T_j e_j/n_j > T_j$ <sup>33</sup>. Allowing for a delay of 12 months in the payment of taxes, the effective rate of tax on operating cash flow is  $T_j e_{j-1}/n_j$ . The latter will be higher than the nominal rate,  $T_{j-1}$ , when  $e_{j-1} > n_j$ . ( $T$  is nominal rate of income tax)

**Advance Corporation Tax (ACT) :** This is payable on the payment of a dividend in any year  $j$  at the 'basic' rate of income tax in the year the dividend was provided—currently 35%. Thus, the payment of a dividend of £150 would also give rise to an ACT of  $(150 \times 0.35)/$



$1 - 0.35 = \text{£}80$ , which is imputed to (i.e. credited to) shareholders. This payment of ACT is, of course, recovered by way of deduction from the 'main stream' corporation tax payment, but there is a restriction on ACT set-off. In any year  $j$ , the 'main stream' corporation tax payment may not be less than a 17% charge on assessable profits for tax purposes minus tax deductible items. This 17% rate represents the difference between the current corporate tax rate of 52% and the 'basic' rate of income tax of 35% on individuals. The unabsorbed portion can be carried backwards and/or forwards. The broad implication of this policy is that even if there is complete *exhaustion* of taxable profits due to various allowances, companies will be required to pay ACT on payment of dividends, that is, there will be some cash outflows on account of ACT, even if there is no 'main stream' tax.

*Capital Allowances* or tax depreciation allowances are allowed at the rate of 100% on certain types of capital expenditure on the addition of new plant and equipment. The excess of the tax allowance over accounting depreciation is allowed to be transferred to a deferred taxation account. Payment out of this account would arise when capital allowances allowable would be lower than accounting depreciation. Although this system helps to smooth out tax payment, it may be noted that during periods of recession and high inflation, incidence of such capital allowances might exacerbate the cash flow shortage.

*Stock Appreciation Allowance* is an important negative determinant of the corporate tax charge introduced in November 1974, and revised in April 1976, and to be continued for at least another two years in the future<sup>34</sup>. This allowance is equal to the increase in the value of an undertaking's inventories (valued on an FIFO basis) between the beginning and end of its financial year *minus* 15% of profits less tax depreciation allowances. Like capital allowances, the stock appreciation relief is also allowed to be deferred, and it is not a permanent relief.

A point of note may be made about the political nature of these two tax deferrals. In government circles<sup>35</sup>, great claims are being made on account of these two allowances as a contribution to business. As has already been shown, the so-called stock appreciation is an accounting artefact and has got nothing to do with real profitability. For the growth element in stocks and capital expenditure, it can be



justifiably argued that if such things (as growth) are desirable from the national point of view, there should not have been any taxes on these two items in the first place. Moreover, the pre-requisite to the utilisation of fiscal incentives is the existence of taxable income. With tremendous increases in interest cost, and eroded conventional profit due to price controls, it was not possible for many companies to take advantage of all potential allowances because of what was called 'profit exhaustion'. For industrial and commercial companies, it was estimated that tax allowances as a percentage of total U.K. income, including stock appreciation, amounted to 92% and 110% in 1973 and 1974 respectively<sup>36</sup>.

Returning to the analysis presented in the earlier section of this chapter, an existing business will, introducing tax payments,  $t_j$ , and cash grant  $G_j$ , be worth operating "on average" if  $k_j - h_j - F_j - A_j - t_j + G_j > 0$  which after substitution of  $k_j - h_j$  by  $n_j$  becomes  $n_j - F_j - A_j - t_j + G_j > 0$ . That is, operating cash flow minus interest minus replacement minus tax payments, plus grants received should exceed zero. The last proposition will only hold true if taxes are based on  $k_j - h_j - F_j - A_j$  or  $n_j - F_j - A_j$ , and "if the rate of tax,  $T_j$ , is set below 100%, taxes *per se* cannot negate the financial viability of ongoing operations"<sup>37</sup>.

The corporation tax system in the U.K. uses pre-depreciation profit,  $e_j$ , as an "assessible basis" for tax calculation, rather than operating cash flow,  $n_j$ , ( $= k_j - h_j$ ). The difference between  $e_j$  and  $n_j$ , as we have seen, is  $p_j$ , periodic working capital investment. Under conditions of endemic inflation and/or growth in sales volume  $e_j > n_j$  will emerge; therefore, a tax based on  $e_j$  will be effectively higher in terms of  $n_j$ , out of which it is to be paid. This could lead to situations in which pre-tax cash flow earnings which were positive before tax but negative after tax payments. That is,  $n_j - F_j - A_j - t_j + G_j < 0$  would result in conditions of rising costs and price controls and taxes, based on conventional method.

To complete the derivation of financial viability, dividend payments,  $D_j$ , paid to the providers of equity capital, must be brought into the viability equation. That is, the amount of cash on which the Board of Directors of a Corporation can exercise their discretion of either to distribute dividends,  $D_j$ , or reinvest in internally financed



growth,  $R_j$ , is determined by the excess of  $n_j - F_j - A_j - t_j + G_j > 0$ . In other words, ideally one should expect  $n_j - F_j - G_j - t_j + G_j > D_j + R_j$  to be true "on average".

Assuming  $R_j = 0$ , as it could be argued that growth investment should be financed externally, then  $n_j - F_j - A_j - t_j + G_j - D_j > 0$  would represent a condition of financial viability which simply states that operating cash flow generated by production and trading must "on average" cover the capital expenditure incurred in maintaining the current level of activity, and remunerating the debt proprietorship and shareholders after paying taxes, etc. As our analysis showed, this criterion of profitability and financial viability could not have been satisfied by companies, in general, in manufacturing in the U.K. during 1973-75. The circumstances of high inflation and price control operated on the basis of conventional accounting created a situation in which external financing was needed to maintain the financial viability of on-going operations. As is well known, in view of the prevailing collapsing condition in the capital market, maybe reflecting the sharply reduced real profitability and uncertainty about future levels of inflation, most of the external finance had to be obtained from the banking sector. Not only did the financial viability of the manufacturing industry deteriorate sharply, but almost universal and total dependence on bank finance to meet the increasing shortfall significantly raised the probability of corporate bankruptcy. It may also be argued that the increased cost of bank finance transferred large amounts of real profit from manufacturing to banking and it might also have directly contributed to cost inflation in the manufacturing sector.

It can therefore be concluded that although an accounting system does not itself create resources, the possibility of misallocation of resources due to the use of a faulty accounting methodology can, in practice, be quite significant. The use of historic cost accounting as a basis for operating the prices policy resulted in significant underpricing of sales, due to the omission of the cost of working capital investment and depreciation "shortfall" in determining product prices according to the allowable cost regime. From the very nature of these cost omissions, conventionally-measured profit was increasingly overstated, while earning measured on a cash flow basis



were increasingly reduced. Failure to recognise this interconnection between companies' profits and finances not only threatened their financial viability, but resulted in the transfer of a significantly larger quantity of resources out of the manufacturing industry than was either apparently revealed or originally intended in the Price Code.

Since the use of conventional accounting methodology is rather universal outside the socialist block of countries, the 3rd chapter, as already indicated, is devoted to a survey of the relevant literature from the U.K., the U.S.A., Australia, and Newzealand. The survey, however, begins with the position taken up by the U.K. Price Commission on the deterioration of company profit margins based on the data submitted to the Commission.

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