

5. THE INVENTORY ADJUSTMENT

1. Details of Calculations

The method of calculating the cost of sales adjustment (COSA) has been explained earlier. In this chapter, we present the results of applying the method to the sample as a whole as well as to the various groups within the sample. Since the sample was selected for government and non-government companies separately, we have two groups. The non-government companies were further sub-divided into three age-groups from which samples were drawn. This gives us three sub-groups. Moreover, after the total sample for the non-governmental companies was drawn, we subdivided the sample using two additional criteria: the size of the company (as denoted by subscribed share capital) and the industry affiliation. The classification based on industry affiliation was deliberately done in a way to correspond with the disaggregated price indices and a particular company was assigned to a particular industry if more than half of its sales were of a commodity (or commodities) included in that industry as per the standard classification used in the wholesale price index (WPI). Some of them could not be so allocated, and were clubbed together in the 'miscellaneous' category. Thus, in all, we had twenty groups of companies as given below:

- Group 1 : all selected companies;
- Group 2 : all government companies;
- Group 3 : all non-government companies;
- Group 4 : companies with a subscribed share capital of Rs 50 lakh to Rs 1 crore;
- Group 5 : companies with a subscribed share capital of 1 crore to Rs 5 crore;
- Group 6 : companies with a subscribed share capital of Rs 5 crore and above;
- Group 7 : companies registered as public limited before 1960.

38 *Inflation Accounting and Corporate Taxation*

- Group 8 : companies registered as public limited after 1960 but before 1970;
- Group 9 : companies registered as public limited after 1970;
- Group 10 : other food articles and iron ore (1);
- Group 11 : fuel, power, light and lubricants (2);
- Group 12 : dairy products, grain mill products sugar and beer (3);
- Group 13 : textiles (4);
- Group 14 : chemicals and chemical products (5);
- Group 15 : ceramic tiles, glass and glass products, cement and asbestos brake lining (6);
- Group 16 : basic metals and alloys (7);
- Group 17 : non-electrical machinery (8);
- Group 18 : electrical machinery, apparatus and appliances (9);
- Group 19 : transport equipment (10);
- Group 20 : not elsewhere classified (11).

As is obvious, groups 2 and 3 are with reference to ownership, groups 4 to 6 are with reference to size, groups 7 to 9 are with reference to age and groups 10 to 20 are with reference to industry affiliation. While blowing up the adjustments, however, only the age classification can be used since the sampling was done after stratifying the population on this basis. The other classifications have been undertaken only to indicate the varying impact of inflation adjustments. Since size, age, and industry classification are with reference to non-government companies only, the blowing up of the calculated COSA for group 2 has to be done separately.

For all groupings except industry classifications only the CPP (constant purchasing power) method would be applied, since we have not undertaken the massive task of using CCA (current cost accounting) for each individual company. The industry classifications were primarily intended to show the impact of CCA, though if it were actually adopted and each individual company adjusted its accounts accordingly, the industry group totals might have been different from those calculated by us, since within each group, individual companies

are affected by inflation in varying degrees. Anyway, our use of CCA is limited to industry groups in this exercise. We also use CPP for the industry groups.

The adjustments were done separately for the stock of finished goods and raw materials, work-in-progress being considered as raw materials for this purpose. These adjustments were later added up to arrive at the final figure for COSA.

Choosing the exact price index for the use of CPP method is difficult. We decided upon using three alternative indices—the consumer price index (CPI), the wholesale price index (WPI) and the implicit GNP deflator (IGD).

2. Estimates of COSA

Tables 5-1.1 through 5-1.9 give the calculated COSA for the first nine groups (i.e., those excluding the industry groups) based on CPI, WPI and IGD. Tables 5-2.1 through 5-2.11 give the same for the eleven industry groups, plus COSA based on specific price indices (CCA). For the last industry group (miscellaneous), no specific price index can be used, hence no additional column for this. The other ten pairs of specific price indices were chosen (or prepared) after noting the major sales item(s) of and major raw material(s) used by the companies falling in each group. When a composite price index was prepared by us from individual indices given in the *Wholesale Price Statistics*, they were weighted using the same weights which are used in calculating the general wholesale price index (base = 1970-71). Obviously, there are too many approximations involved in these calculations to be called CCA, but these calculations are, in any case, only indicative of direction and broad magnitudes. Our ultimate conclusions are based on only Tables 5-1.2 and Tables 5-1.7 to 5-1.9 because the blowing up of the adjustments for the population can be done only using the same route used while selecting the sample (which was by stratifying the population on the basis of ownership and age of the companies). The details of the indices used for the adjustments are given in the Annexures.

From the results of our calculations, it is seen that so far as the direction of the adjustments is concerned, it is predominantly positive, implying that historical cost accounting profits are generally overstated on this particular account (inventory valua-

tion). In a few cases, it is negative but the maximum overstatement is far higher than the maximum understatement within each group. It would probably be desirable to note the over or understatements as percentages of the profits before tax, but that is postponed until we come to the blowing up of the sample estimates for the population as a whole. It will suffice here to note that most of the adjustments are substantial relative to the profits before tax and therefore quite important.

The adoption of the general wholesale price index for the CPP method reveals a fixed pattern in the adjustments across groups, indicating that profits were overstated every year except in 1974-75. In general, the overstatement in the last year under observation (*i.e.*, 1978-79) is far higher than in the other years.

If we use the consumer price index instead, the year when most of the groups exhibit understatement of profits due to inflation is 1976-77. This is true of some groups, due to the changing prices, also in 1974-75 and/or 1978-79. Thus, the results of our calculations to find out COSA using the CPI are not as consistent across various groups of companies as those of the calculations using the WPI.

If the implicit GNP deflator is used, the COSA turns out to be negative (*i.e.*, traditional accounting understates profits) for the year 1975-76 in the case of all the groups. Additionally, the results indicate negative COSA for the year 1977-78 for a few groups.

What all this implies is that even when one says that the CPP method should be adopted, it is not an unambiguous statement. Depending on which index of purchasing power one chooses, the resultant COSA will be greater or smaller than the others.

Use of the CCA does clearly show the varying impact of inflation on various industry groups. For example, while for industry group 4 (Textiles) we find underestimation of profits on this count using traditional accounting in five out of the nine years under observation, industry groups 7 (Basic metals and alloys), 8 (Non-electrical machinery) and 10 (Transport equipment) *i.e.* are seen to have reported overestimated profits in all those nine years. Taking the last year, 1978-79, however, all the industry groups exhibit positive COSA, implying overestimation of profits due to inflation, which are, generally speaking,

Comparison of the results for groups 2 and 3 clearly shows that the impact is far more on government companies than non-government companies. This implies that the illusory inventory profits are far higher relative to the profits before tax, in government companies than in non-government companies.

A similar comparison between groups 7, 8 and 9 reveals that both the old and new companies require less adjustment for inflation in their accounts than the medium-age group of companies.

Among the industry groups, the impact of inflation on profits through inventory valuation is the most in the case of group 16, unless CPI is adopted for COSA calculations. In fact, the use of CPI would lead to the result that there is very little distortion due to inflation in the calculation of profits, at least in the year 1978-79. COSA is generally highest when the general WPI is used.

The difference between CCA and CPP is clearly brought out in the table (5.3), particularly in the results for group 11, where CPP does not indicate very high COSA (relative to other industry groups), but CCA does.

Since these results are only for the year 1978-79, they cannot be generalised. However, without giving further tables along the lines of Table 5.3 for the other years, we make the observation that the differential impact of inflation through illusory inventory profits on different groups does, in general, follow the same pattern as noted above, on the basis of similar calculations (not reported) for the other years of the reference period.

Before concluding this chapter, we estimate the cost of sales adjustment of profits for the population, which consists of manufacturing public limited companies with paid-up capital of Rs 50 lakh and above, on the basis of the sample estimates. Since the sample was selected after classifying the population into three groups, the blowing up has to be done for these three age-groups separately and the results added up to arrive at the population estimate. The blowing up factors are the ratios of the population group totals to the respective sample-group totals of paid-up capital which are 20.02, 13.11 and 20.51 for age-group 1 (registered before 1960), 2 (registered during 1960-1970) and 3 (registered after 1970), respectively. The

blown up COSA figures would then be Rs 151033 (122500 + 35828 - 7295) thousand, Rs 7548639 (5866823 + 927114 + 754702) thousand, and Rs 1444355 (1118007 + 162031 + 164317) thousand, with the use of the CPI, the general WPI and the IGD, respectively. The corresponding figures for the government companies are Rs 318280 thousand, Rs 5361461 thousand, and Rs 837862 thousand. The population in this case, it must be pointed out, consists of only manufacturing public limited companies owned by the Central government. The blow-up factor is 3.81, implying a sample coverage of about 26 per cent.