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IMPACT OF INFLATION ACCOUNTING
ON CORPORATE PROFITS

by

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L.C.Bhandari

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Impact of Inflation Accounting on Corporate Profits

Dr. Ramesh Gupta
L.C. Bhandari*

In recent years, there has been increasing criticism of financial statements prepared under the long-established historical cost conventions. The end-users of the financial statements treat reported earnings as if it were an economic concept. But the present accounting practices tend to conceal the dependence of the earnings concept on estimates of worth by substituting accounting ritual for judgement while determining asset values. One such ritual is the recording of business transactions at historical costs with an implicit assumption that the measuring unit (i.e., rupee or pound) remains stable. Evidence of the instability of monetary units has been overwhelming and the probability that instability will prevail into the foreseeable future is very high.

Two different approaches to adjusting for inflation have been suggested in the on-going debate on inflation accounting. One is to use current values instead of historical cost in preparing the financial statements; and the second is to adjust historical cost data for changes in the purchasing power of the monetary unit. The former involves regular revaluation of assets and deals with specific price changes of the individual items held or dealt with by the firm; and the second is a pure scale adjustment for change in the measuring unit, i.e., the purchasing power of the rupee.

*Mr. Bhandari's role in writing of this paper was limited to computer work which he did under the general guidance of Dr. Gupta. As such Dr. Gupta takes complete responsibility for the paper as a whole.

This study is not aimed at resolving controversy about the relative merits of historical costs as compared with the systematic use of current replacement cost in measuring the business income. It simply reports the results of applying general price-level accounting techniques as set forth in the British Accounting Standard Steering Committee's Statement of the Standard Accounting Practice (SSAP) No. 7, entitled "Accounting for Changes in the Purchasing Power of Money." It provides the comparative financial data using 'common rupee' accounting. In fact the general price-level financial statements as recommended by SSAP No. 7, are similar to conventional statements in that they preserve the cost basis and realization rule, and yet are different in two respects:

- i) They present all financial statement items in a unit of measurement that represents the same amount of general purchasing power - the general purchasing power of the rupee on the balance sheet.
- ii) They report general price-level gains and losses that result from holding monetary assets and liabilities during inflation or deflation; such gains and losses are not recognized under historical accounting.

Empirical Studies

In the U.K. and the U.S.A., a few empirical studies have been made providing insight on the effect of general price-level adjustments on published financial data. Some published studies are: Rosenfield (1969), Cutler and Westwick (1973), Buckmaster and Brooks (1974 and 1975), Davidson and Weil (1975a, 1975b, 1975c), Ramesh Gupta (1975), Parker (1977). No detailed study of this kind has been done

in India. A few scattered attempts to study the effect of inflation on profits of a single firm or couple of firms at a time have been reported in the articles published in "The Chartered Accountant" and in the book, "Inflation Accounting: Tools and Techniques", published by the Institute of Cost & Works Accountants of India. No systematic study has been undertaken to gauge the impact of inflation on corporate earnings and their profitability. This study is an attempt to fill that gap by providing inflation adjusted financial data for a large number of Indian corporations.

Design of the Study

The basic approach of this study is to approximate general price level adjustments to the reported profits and study its impact on relevant financial ratios. The earnings of 57 companies covering 9 industries have been restated for a period of 7 years (1970 to 1976). Price-level adjusted earnings represent approximation of those amounts which would have resulted if the individual company actually been applying the SSAP No.7 proposed restatement techniques.

In restating profits, the most important adjustment of the financial statement is the restatement of depreciation associated with a restatement of the related asset costs and the accumulated depreciation. The cost of materials used or goods sold is also affected significantly by the price changes and need restatement. Other items in the profit and loss account incurred during the year are restated in terms of the year-end purchasing power of the rupee. Also, the gain or loss on net

monetary items is a distinctive feature of price-level accounting. In many cases, it is true that depreciation would involve the largest adjustment, but at least these other adjustments should be made to revise the net earnings so as to reflect the change in price-level. Such adjustments are discussed in detail in a subsequent section.

Sample Selection

To select the sample, we considered the top (with respect to total assets) 101 public limited companies in the private sector for 1976-77, published by The Economic Times (April 5, 1978, p. 6). Of these 101 companies, we could retain only 54 companies in our sample because:

- i) 34 companies were omitted because of non-availability of required financial data for the period 1969 to 1976.
- ii) 3 companies were not listed on the stock exchange and, therefore, data were not available.
- iii) 5 companies were non-manufacturing units (three in 'finance and investment' and two in 'trading') and were not included.
- iv) 5 companies were dropped because the month in which their financial year ended were out of line. (We have included only those companies whose financial year ends in March, June, September or December.)

Surprisingly not a single company from the cement industry found a place in the sample. This being an important industry, we selected three companies from the cement industry on the basis of their assets, and included them in our study. Thus, we had a sample size of 57 companies covering 9 industries. (See Table 1).

Of the 57 companies included in the sample, for 29 companies the financial year ended in March, for 9 in June, for 2 in September and for 17 in December.

Data Collection

The data used in this study are taken from the Bombay Stock Exchange Directory. Data with regard to current assets, inventory, gross block, accumulated depreciation, total liabilities, current liabilities, net worth, preference capital, equity capital, reserves, number of shares outstanding, net sales, cost of goods sold, depreciation, pre-tax profits, provision for taxes, equity dividend, preferred dividend, interest payments, for the period 1968 through 1976 were collected.

Price Index Used

Among the various price indices available in India, there were two serious contenders for this kind of study. One was the Wholesale Price Index (WPI) and the other Consumer Price Index (CPI). We preferred CPI because the shareholders are the ultimate recipients of the earnings and the owners of the companies. They, as individuals, are more interested in the consumer prices rather than wholesale prices. In U.K., SSAP No. 7 also recommends RPI in preference to other available indices. Therefore, CPI was used to adjust the financial data for general price-level changes. The All India Average Consumer Price Index with 1960 as the base period (1960 = 100) was taken from the RBI Bulletin. (See Table 2).

Methodology

To restate the profits, we need a company's financial data based on historical costs for the year and a conversion factor derived from price index numbers. As stated earlier, the CPI is used in this study as the index of the general price-level changes. The CPI index is available for each month and the index at the balance sheet date is approximated by using that month's index in which the financial year ends. Conversion factors used in restatement are computed from the general price-level index by dividing the index number for the current balance sheet date by each of the other relevant index number.

Consider, for the purpose of exposition, the problem of analysing a company whose financial year ends on March 31, 1973. For example, the CPI for March 1973 is 216 and the average index for 1972-'73 (April 1972 - March 1973) is 206.7, then to restate the sales accrued evenly throughout the financial year the conversion factor will be $216 \div 206.7 = 1.045$. The sales of Rs 100 million recorded at historical costs would be restated at Rs 104.5 million.

Adjusting Depreciation

The depreciation amount in the historical cost statement is recorded on the basis of the purchase cost of the asset. To restate the depreciation in current-rupee terms requires an extensive analysis of the related asset costs and the accumulated depreciation. To obtain such detailed information for each company is almost an impossible task. To begin with, it may be useful to find the depreciation method

used by the company in each year which is ~~generally~~ **not** mentioned in the financial reports. Moreover, most of the companies use more than one method of depreciation in the same year. A methodology was developed to restate depreciation for each year assuming straight-line basis of depreciation. This is explained in the following section.

To restate the depreciation, first we determine the average age of its depreciable assets. This would be equal to its average life multiplied by the fraction of life which has already expired. The average life of the asset can be determined by dividing the total costs of depreciable assets by the depreciation charge for the year. The fraction expired can be estimated by dividing the accumulated depreciation by the total cost of the depreciable asset. The multiple of the two gives us the average age of the company's fixed assets.* We have computed such average age for each company using our initial year (1968) data. By subtracting this age from the year 1968, the acquisition date was estimated. The CPI index on this date in relation to the 1968 index then was used as the basis for restatement of 1968 depreciation charge. From 1969 onwards, the restatement of depreciation is being done as follows:

* For companies actually using accelerated depreciation methods, the average age of their assets has been slightly over estimated. Davidson and Weil (1975a) provides age reducing factors, based on a series of linear difference equations, for computing average age of assets when depreciated by accelerated methods. Depending upon asset life, annual growth in assets and depreciation method in use, the average age reducing factors range from 1 to 24 per cent.

First, we split the conventional (historic cost) depreciation charges for the year into two parts, one related to the remaining old assets and the second part is the depreciation provided on newly acquired assets during the year. To determine the fraction of last year's assets which are still being held, first we calculate the fraction which is being disposed of. This can be estimated by first calculating a sum which is equal to the accumulated depreciation in previous year plus the depreciation charges for this year minus the accumulated depreciation at the end of this year, and then dividing this sum by last year's accumulated depreciation. The rationale is that under the straight line method of depreciation, when an asset is disposed of,, we write off the same proportion of accumulated depreciation which the cost of disposed of assets bears to the gross block. Once we know the fraction of the total assets which is being disposed of, the balance would be the remaining part of last year's assets which a company is still holding.

To restate the depreciation on remaining old assets, we take last year's proportionate restated depreciation (up to last year) related to the remaining old assets and multiply it by the conversion factor of this year's price index to the last year's price index. Depreciation on newly acquired assets during this year is restated by means of average annual price index to the end of the year index. The sum of two would give us the restated depreciation.

Adjustment for Cost of Goods Sold

The adjustment for cost of goods sold depends upon the assumption that the company makes about the flow of goods in computing the cost of goods sold. Under First-in, First-out (FIFO) method, a company's most recent purchases are assumed to remain in the year-end inventory, while earlier purchases constitute cost of sales. Under Last-in, First-out (LIFO) method, recent purchases are sold first. If inventory levels do not change, then the cost of sales equals the purchases which is easier to express in terms of the current purchasing power. If purchases are rapid and spread fairly evenly throughout the year, purchases may be in rupees whose general purchasing power can be approximated by using the average general purchasing power of the year. Under weighted average method, the cost of goods available for sale is made up of two elements: beginning inventory and the current year purchases. Under this method, the assumption is that both ending inventory and cost of goods sold are composed of equal portions of all goods available for sale. Thus, by determining the overall portion of total goods available for sale that remains in ending inventory and the price level adjusted cost of those goods available for sale, it is feasible to compute the price-level adjusted cost of inventories originally charged on a weighted average basis.

In this paper, we have assumed that companies included in the sample follow FIFO method. Under this method, most recent purchases are assumed to remain in year-end inventory, while the beginning inventory

and earlier purchases constitute the cost of sales. The procedure we followed in restating cost of goods sold was as follows:

First, we calculated the age of goods in year-end inventories by determining the number of days purchases contained therein. This inventory then was restated in current rupee terms from the rupee of purchase date. This closing inventory restated, let us say for the year 1969, becomes beginning inventory in 1970 stated in 1969 rupee. To calculate the restated cost of sales for 1970, first we have to restate the beginning inventory (i.e., the closing inventory of 1969 restated in 1969 rupee terms) in 1970-end rupee terms adjusting it for one year price change. The purchases made during the year can be converted into end-rupee terms by using average price index assuming that the purchases are spread fairly evenly throughout the year. The purchases for this year is equal to closing inventory plus cost of goods sold minus beginning inventory. The closing inventory for 1970 can be restated again by first finding the average age (i.e., the number of days purchases contained therein) and converting it into current rupee terms. Thus, beginning inventory, purchases and ending inventory are all restated in terms of current purchasing power. And thus the restated cost of goods sold can easily be determined.

Adjusting Other Revenue and Expense Items

The revenue and expense items other than depreciation and cost of goods sold are recognized in the accounts at approximately the same time that the receipt and expenditure occurred. If these items are spread

fairly evenly throughout the year and price level changed at a constant rate during the year, then it can be assumed that the receipts and expenditures all occurred when the average general price-level for the year was in effect. The conversion factor for such items are based upon the average index for the year in relation to the year-end index.

Gain or Loss on Monetary Items

Holding cash or other monetary items during inflation results in the loss of purchasing power. On the other hand, being a debtor during inflation produces a gain since the liability will be discharged with the rupees of small purchasing power than originally were borrowed. The general price-level gain or loss which arises from holding net monetary items during inflation is included in the restated profits but are not recognized in conventional profits.

To compute gain or loss on monetary items we first determine the balance of net monetary items for two successive years. Net monetary assets are current assets minus inventories, and the net monetary liabilities are the total liabilities including preference shares. In our view, preference shares should be treated like any other fixed long term monetary obligations of the company on which in every period a pre-determined charge is paid as dividend, and therefore, general price-level gains or loss from preferred stock outstanding should be included in the computation of restated profits. This treatment is also in consistent with SSAP 7 definition of net monetary assets. The paragraph 28 of SSAP 7 says: "monetary items are assets, liabilities, or capital, the

amounts of which are fixed by contract or statute in terms of number of pounds regardless of changes in the purchasing power of the pound". (Emphasis on the word 'capital is added).

The procedure for measuring the purchasing power gain or loss on each company's net monetary position for each year is as follows. On previous year's net monetary liabilities (or assets), we compute gain (or loss) based on the price increase during the year. On any increase or decrease in the balance of net monetary items over the previous year, the gain or loss is computed using average price index in relation to the end-year price index.

Empirical Results

Using the procedure described in the earlier section, we calculated the restated profits before tax (restated PBT). Differences between net income on the general price-level basis and on the historical cost basis varied widely among the companies. Some companies showed positive gains while most of them showed losses. For all the companies in the sample, if price-level adjustments were made in their financial statements, the average PBT for the period 1970-76 would be reduced by 33 per cent. The percentage change in PBT due to restatement was computed by taking the average of company's PBT over 7 years (1970-1976) and then expressing the differences between restated and conventional PBT as a percentage of conventional PBT. The results are reported in Table 3(a).

The results demonstrate clearly the error of the frequently stated view that all industries are affected relatively same by inflation, and that a single overall adjustment factor applied to the reported profits will yield satisfactory results. Among industries, the average percentage change in PBT ranges from 4.7 per cent of reported PBT in the case of Utilities to 71.8 per cent in Metal industry. The reason being that although both the industries are capital-intensive (having a heavy investment in fixed assets), Utilities have much better debt-equity ratio (1.24) than Metal industry (.52) (See Table 6). This indicates that companies with large amounts of debt outstanding will be better off during inflation.

In addition, Table 3(a) reports the impact of price-level adjustments to PBT in four categories : i) adjustment to current year's depreciation expense, ii) adjustment to cost of goods sold, iii) net purchasing power gain on net monetary position, and iv) the net adjustments on all other accounts. The depreciation adjustment accounts for the largest percentage change in PBT (43.1 per cent) and is partly compensated by purchasing gain on net monetary items (27.6 per cent). The inventory adjustments account for 19.1 per cent change in PBT.

Among companies, the variations in PBT are from 49 per cent gain to 244 per cent loss due to restatement. The median adjustment is a loss of 27 per cent while average loss in PBT is 33 per cent (See Table 4). The top five gainers and losers are listed in Table 5. The largest gain accrued to Ratnakar Shipping Company (49 per cent) while India Cements Ltd was the heaviest loser (244 per cent).

Effects of Variations in Inflation Rate

Larger changes in the general price level obviously have a greater effect in restating the earnings than small changes. To study the effect of various inflation rates, the study period was broken into three sub-periods: i) low inflation period (January 1970 to December 1972) - inflation rate varying from 1 to 8 per cent, ii) high inflation period (January 1973 to June 1975) - 9 per cent and above, and iii) deflation period (July 1975 to December 1976) - the emergency period when there was a negative rate of inflation. The results for these three periods are reported in Tables 3(b), 3(c), and 3(d) respectively.

During low inflation period, the average percentage change in PBT was 21 per cent, depreciation adjustment contributing the largest loss (30.9 per cent). During this period the chemical industry showed a net increase of 6.8 per cent in PBT. The industry being comparatively new, the adjustment to depreciation charges were modest (15.8 per cent), while heavy debt financing resulted in a large purchasing power gain (27.1 per cent). The Metal industry showed the heaviest loss of 39.5 per cent (See Table 3(b)). Across the companies, the range has been a maximum loss of 259 per cent shown by Hindustan Motors, followed by Titaghur Paper Mills (152 per cent). Coromandel Fertilizers registered a gain of 44 per cent. The median correction was 18 per cent loss (See Table 4).

During high inflation period, the average loss for all the companies combined was 26.6 per cent. Adjustment on account of depreciation charges was 51.4 per cent, closely followed by the cost of goods sold adjustment (49 per cent). In high inflation period the difference between adjustment to depreciation charges and cost of goods sold had been very small compared to other periods. Results are not very surprising. The effects of high inflation for a short period on depreciation charges get scattered over the remaining life of assets while in the case of inventory, the holding period being generally less than one year, inflation affects cost of goods sold adjustment for the current year severely. During this period, the reduction in PBT due to depreciation and cost of goods sold restatement was largely offset by the purchasing power gain on net monetary items (66.7 per cent). Thus, the total effect remained relatively low.

Table 3(d) summarises the results of the period when inflation rate was negative. The average negative effect of deflation on PBT is 67.3 per cent — mainly contributed by depreciation charges (46.6 per cent) and the purchasing power loss on monetary items (36.7 per cent). On surface, it may look absurd to have higher depreciation charges due to price-level adjustment in a period of deflation. But it is not. From the previous period of high inflation, there exists a sizable delayed negative impact on the price-level adjusted depreciation charge in this period. The percentage change in PBT has been larger in the deflation period than high inflation period mainly due to the purchasing

power loss on monetary items to the tune of 36.7 as opposed to a gain of 66.7 per cent during the high inflation period.

Implications

It is difficult to generalize about the effects of more rapid inflation on general price-level adjusted income. There are two major offsetting forces at work: higher depreciation expenses, and gain on the net monetary liabilities. There is no a priori basis for deciding which force will be greater. The answer depends primarily on three factors: a) the rate of change in the price level this year relative to changes in earlier years; b) the estimated service life of fixed assets; and c) the capital structure. The depreciation adjustment reflects the impact on current appreciation of the cumulative change in prices since the assets were acquired. The gain on net monetary liabilities depends on this year's change in prices and the portion of assets financed by the debt.

To illustrate, let us take the case of Utilities. During high inflation period (Table 3(c)) the price-level adjustments showed a gain of 47.3 per cent largely contributed by purchasing power gain of 98 per cent on monetary items. During the deflation period, utilities showed a loss of 146 per cent, again largely contributed by loss on monetary items (103.6 per cent). The percentage change in PBT due to adjustment in depreciation charges has been only 46.7 per cent in the high inflation period and 43.6 per cent in the deflation period. Monetary gain or loss completely dominates all other adjustments, the reason being that the

average debt-equity ratio of the companies included in this industry is 1.24 which is significantly higher as compared to any other industry (see Table 8).

In contrast, if we look at the group of Miscellaneous industries (companies included are Tata Oil Mills, Hindustan Lever, and ITC Ltd), the percentage change in PBT due to general price-level adjustments during the high inflation period is -55.7 per cent as compared to -13.5 per cent in the deflation period. The results indicate that percentage change is relatively small during deflation, in contrast to Utilities where the negative percentage change is very high. This is so because the debt-equity ratio in Miscellaneous industries is only .14 compared to 1.24 in Utilities. The effect of purchasing power gain or loss on monetary items in Miscellaneous industry is insignificant as compared to depreciation adjustment. The basic problem is that the entire gain on long term debt outstanding is included in current income, while the adjustment in assets' cost is spread over their useful life. Thus, in a period in which the rate of inflation increases compared with past years, the consequence is to recognize a large gain on the debt in a single year while amortising the cost adjustments to the firm's assets over a considerably longer period, thereby increasing net income for the current year.

Uncovered Dividends

Table 6 summarises the effect of restatement on dividend coverage. Column 6 shows the dividend covered by earnings based on reported profits

and the column 7 lists the computed coverages based on adjusted earnings. The overall coverage for all the companies included in the sample is 1.1 using adjusted profits data as compared to 2.7 based on conventional profits. In five industries comprising 29 companies the average dividend distribution has been more than restated profits available for distribution. In fact, during the period 1970-76, in two industries (Cement and Metal) dividend ~~was~~ paid even though the restated earnings available (after paying taxes and preferred dividends) for distribution to the shareholders were negative. If our concept of maintenance of capital is that of maintaining the purchasing power of capital rather than just maintaining the nominal capital, then on an average, companies in these industries have been distributing dividend out of their capital.

Tax Burden

On an average for the period 1970-76, the companies have paid 42 per cent of their PBT as taxes (See Column 8 in Table 6). The percentage variations among industries have been from a low of 23 per cent in Utilities to a high of 59 per cent in Miscellaneous industries. The same tax liability computed as a percentage of adjusted profit before tax increases to 62 per cent - an increase of 20 percentage points. In some industries (i.e., Cement and Metal) the tax liability have been more than 100 per cent of their restated PBT. The effect on Utilities has been minimal - an increase of only one percentage point (from 23 to 24 per cent) - mainly because their increased depreciation charges (which

resulted into lower PBT) got offset by untaxed monetary gains on their large liabilities. Clearly, monetary gains is a significant factor in the adjusted net income.

In recommending general price-level changes there has been a lively debate on whether to include the monetary gains in restated income for tax purposes. The gain from being in a net monetary liability position, although real, does not produce a current flow of cash; they show the reduced economic significance of outflows that will have to be made later. Recognition of monetary gains in adjusted income may enable a company to show adjusted profit even though its cash position is deteriorating. Here, we do not undertake to resolve the debate. Our limited objective in this paper is only to highlight the significance of gain or loss on monetary items.

Some more general implications suggested by consideration of the special factors involved, as well as by analysis of our data, are as follows:

Ballooning Effect

The nature of the income statement and the cumulative effect over time of moderate inflation tend to magnify the effects of inflation on reported profits. Rosenfield (1969) has called this the "ballooning effect" which has two causes. First, net income is a small amount in relation to most other amounts in the financial statements. Small changes in relatively large amounts in the statement caused by moderate inflation may be substantial in relation to net

income. Second, depreciation, in many cases, is related to assets bought years before the balance sheet date. Restatement of the cost of the assets and the related depreciation involves the cumulative compound amount of inflation since the assets were purchased.

Rapidly Growing Vs. Slowly Growing Companies

General price-level adjustments tend to affect rapidly growing companies less than slowly growing companies. Rapidly growing companies have, in general, newer plants and the upward adjustment of depreciation expenses is lower for them than for most slowly growing companies. Moreover, the rapidly growing companies tend to have higher debt-equity ratio. For example, during the period 1970-76, on an average price-level adjusted PBT for Chemical industry is 8.4 per cent less than conventional PBT as compared to 48.1 per cent reduction in PBT in the case of Cotton Textile industry. Cotton Textile's machinery is older (average age is 10.3 years) as compared to that of the Chemical industry (average age is 7.1 years). The debt-equity ratio in Cotton Textiles is 0.44 per cent compared to 0.60 per cent in Chemicals. During the study period (1970-76), Chemical industry had grown much faster than Cotton Textile industry.

Conclusion

The objective of this article is a limited one—to measure the impact of price-level accounting on reported profits. No attempt has

been made to evaluate the theoretical merits of SSAP 7 proposals for price-level accounting. As shown by this study, the impact of inflation on individual companies and industry groups varies greatly. The results with varying inflation rates emphasize the differential effects on companies of general price-level adjustments and the significance of monetary gains and losses. Though no broad generalization is possible, the impact of inflation on reported profits cannot be ignored.

Table 1(a)

Industry-wise Classification of Companies Studied

Industry	Includes	No. of Companies			Total
		Included in the Sample	Excluded Due to data inavailability	Out-of-line year ending	
1) Utilities	Electricity & Transport	11	3	0	14
2) Cement	Cement	3*	-	1	4
3) Cotton Textiles	Cotton Spinning & Weaving	9	3	0	12
4) Other Textiles	Jute, Synthetic, Silk and Woolen Textiles	5	1	1	7
5) Paper	Paper, Pulp & Hardboard	4	2	0	6
6) Engineering	Electric & General Engineering	7	7	2	16
7) Metal	Steel, Aluminium & other Metals & Alloys	7	3	0	10
8) Chemical	Chemical Engineering	8	5	0	13
9) Miscellaneous	Food products, tobacco, plantation, Construction, etc.	3	10	1	14
	Total	57	34	5	96**

* Not included in the list of first 101 (with respect to total assets) public limited companies in the private sector for the year 1976-77, published by "The Economic Times" (April 5, 1978, p. 6).

** Out of 101 companies of the above list, 3 were not listed in the Stock Exchange and 5 fell in the non-manufacturing industries (three in 'investment and finance' and two in 'trading'), leaving 93 companies for consideration. Adding 3 companies in the cement industry (referred above), total number of companies was 96.

Table 1(b)

List of Companies Included in the Sample1. Utilities

1. The Tata Power Co Ltd
2. Bombay Suburban Electric Supply Co Ltd
3. Calcutta Electric Supply Co Ltd
4. The Ahmedabad Electricity Co Ltd
5. The Andhra Valley Power Supply Co Ltd
6. The Scindia Steam Navigation Co Ltd
7. The Great Eastern Shipping Co Ltd
8. India Steamship Co Ltd
9. Ratnakar Shipping Co Ltd
10. Chowgule Steamships Ltd
11. Dempo Steamships Ltd

2. Cement

12. The India Cements Ltd
13. Shree Digvijay Cement Co Ltd
14. Orissa Cement Ltd

3. Cotton Textiles

15. Shri Ambica Mills Ltd
16. The Mafatlal Fine Spg. & Mfg. Co Ltd
17. Kesoram Industries & Cotton Mills Ltd
18. Jiyajeerao Cotton Mills Ltd
19. Hindustan Spg. & Wvg. Mills Ltd
20. Delhi Cloth & General Mills Co Ltd
21. The Century Spg. & Mfg. Co Ltd
22. The Ahmedabad Mfg. & Califo Printing Co Ltd
23. The Bombay Dyeing & Manufacturing Co Ltd

4. Other Textiles

24. Baroda Rayon Corporation
25. J.K. Synthetics Ltd
26. The Gwalior Rayon Silk Mfg. (Wvg.) Co Ltd
27. Hirlon Synthetic Fibres & Chemicals Ltd
28. The Birla Jute Mfg. Co Ltd

5. Paper

29. The Titaghur Paper Mills Co Ltd
30. Orient Paper Mills Ltd
31. Ballarpur Industries Ltd
32. Seshasavee Paper & Boards Ltd

Table 1(b) Contd.6. Engineering

- 33. Siemens India Ltd
- 34. Crompton Greaves Ltd
- 35. Philips India Ltd
- 36. Hindustan Motors Ltd
- 37. Tata Engineering & Locomotive Co Ltd
- 38. Larsen & Toubro Ltd
- 39. Kirloskar Oil Engines Ltd

7. Metal

- 40. Mahindra Ugin Steel Co Ltd
- 41. Mukand Iron & Steel Co Ltd
- 42. The Metal Box Co of India Ltd
- 43. Guest Keen Williams Ltd
- 44. Hindustan Aluminium Co Ltd
- 45. Tata Iron & Steel Co Ltd
- 46. Indian Aluminium Co Ltd

8. Chemical

- 47. Gujarat State Fertilizers Ltd
- 48. Indian Explosives Ltd
- 49. Coromandel Fertilizer Co Ltd
- 50. Union Carbide India Ltd
- 51. The National Organic Chemicals Ltd
- 52. Tata Chemicals Ltd
- 53. Glaxo Laboratories Ltd
- 54. Atul Products Ltd

9. Miscellaneous

- 55. The Tata Oil Mills Co Ltd
- 56. Hindustan Lever Ltd
- 57. ITC Limited

Table 2Consumer Price Indices*

(Base 1960 = 100)

Percentage Change over Preceding One Year

<u>Year</u>	<u>March</u>	<u>June</u>	<u>September</u>	<u>December</u>
1970	5.29	3.93	5.03	5.08
1971	2.79	1.08	4.26	4.84
1972	5.43	7.49	6.12	7.69
1973	11.34	15.92	19.23	23.81
1974	27.31	29.18	34.68	25.38
1975	16.73	9.01	-4.49	-6.13
1976	-10.90	-11.28	-5.33	0

The seven years (1970 to 1976) period has been split into following sub-periods based on the rate of inflation.

	<u>Period</u>	<u>% Inflation Rate</u>		
		<u>Max.</u>	<u>Min.</u>	<u>Average</u>
I. Overall study period	7 yrs. Jan. 70 - Dec. 76	34.68	-11.28	8.13
II. Low Inflation period	3 yrs. Jan. 70 - Dec. 72	7.69	1.08	5.86
III. High Inflation period	2½ yrs. Jan. 73 - June 75	34.68	9.01	19.53
IV. Deflation period	1½ yrs. July 75 - Dec. 76	-11.28	-4.49	-4.52

*Source: FBI Bulletins.

Table 3(a)

Adjustments to Reported Earnings for the period January 1970
to December 1976 resulting from Application of
Price-Level Accounting Procedures*

(Overall Period)

Industry	Adjustments				Total
	Depre- ciation	Cost of goods sold	Monetary Gains	All other Accounts	
1. Utilities (11)	-43.3	-5.1	40.7	3.0	-4.7
2. Cement (3)	-72.0	-32.1	44.0	1.9	-58.2
3. Cotton Textiles(9)	-52.9	-27.0	28.7	3.0	-48.2
4. Other Textiles (5)	-29.8	-8.9	9.3	1.8	-27.6
5. Paper (4)	-29.0	-11.2	14.4	1.8	-24.0
6. Engineering (7)	-47.6	-36.0	42.6	- 2.2	-43.2
7. Metal (7)	-84.2	-25.4	34.5	3.3	-71.8
8. Chemical (8)	-26.1	-9.8	24.2	3.3	-8.4
9. Miscellaneous (3)	-13.9	-30.1	14.7	1.1	-28.2
All Firms combined (57)	-43.1	-19.1	27.6	2.1	-32.5

*Expressed as a percentage of the profit before tax for the period where positive figures indicate increases to earnings and negative amounts reflect decreases to earnings.

Figures in the bracket are number of companies in the industry included in the sample.

Table 3(b)

Adjustments to Reported Earnings for the period January 1970
to December 1972 resulting from Application of
Price-Level Accounting Procedures*

(Low Inflation Period)

Industry	Adjustments				Total
	Depre- ciation	Cost of goods sold	Monetary Gains	All Other Accounts	
1. Utilities (11)	-36.6	-3.2	28.7	2.6	-8.5
2. Cement (3)	-34.5	-13.9	21.4	2.7	-24.3
3. Cotton Textiles (9)	-37.8	-14.9	15.6	2.7	-34.4
4. Other Textiles (5)	-20.2	- 5.7	4.3	1.5	-20.1
5. Paper (4)	-26.4	-6.7	12.3	1.1	-19.7
6. Engineering (7)	-36.0	-20.4	29.9	1.4	-25.1
7. Metal (7)	-48.7	-11.1	18.1	2.2	-39.5
8. Chemical (8)	-15.8	-8.4	27.1	3.9	6.8
9. Miscellaneous (3)	-9.5	-17.4	8.8	.9	-17.2
All Firms Combined (57)	-30.9	-11.3	19.1	2.2	-20.9

* Expressed as a percentage of the profit before tax for the period where positive figures indicate increases to earnings and negative amounts reflect decreases to earnings.

1. Figures in the bracket are number of companies in the industry included in the sample.

Table 3(c)

Adjustments to Reported Earnings for the period January 1973
to June 1975 resulting from Application of
Price-Level Accounting Procedures*

Industry	Adjustments				Total
	Depre- ciation	Cost of goods sold	Monetary Gains	All Other Accounts	
1. Utilities (11)	-46.7	-11.5	98.0	7.5	47.3
2. Cement (3)	-161.0	-165.3	190.7	8.6	-127.0
3. Cotton Textiles (9)	-56.6	-61.7	62.2	7.0	-49.1
4. Other Textiles (5)	-35.1	-23.3	26.0	6.2	-26.2
5. Paper (4)	-29.2	-22.8	25.9	5.5	-20.6
6. Engineering (7)	-55.3	-87.3	91.7	5.0	-45.9
7. Metal (7)	-114.5	-76.9	101.4	7.7	-82.3
8. Chemical (8)	-34.2	-28.6	54.1	9.8	1.1
9. Miscellaneous (3)	-20.1	-90.9	50.6	4.7	-55.7
All Firms Combined (57)	-51.4	-49.0	66.7	7.1	-26.6

* Expressed as a percentage of the profit before tax for the period where positive figures indicate increases to earnings and negative amounts reflect decreases to earnings.

Figures in the bracket are number of companies in the industry included in the sample.

Table 3(d)

Adjustments to Reported Earnings for the period July 1975
to December 1976 resulting from Application of
Price-Level Accounting Procedures*

Industry	Adjustments				Total
	Deprecia- tion	Cost of Goods Sold	Monetary Gains	All Other Accounts	
1) Utilities (11)	-43.6	10.3	-103.6	-9.1	-146.0
2) Cement (3)	-73.4	22.9	-30.5	-4.4	-85.4
3) Cotton Textiles (9)	-76.5	43.1	-46.1	-5.6	-85.1
4) Other Textiles (5)	-32.3	13.0	-9.0	-6.4	-34.7
5) Paper (4)	-32.8	20.4	-20.4	-9.6	-42.4
6) Engineering (7)	-45.7	46.9	-46.0	-23.0	-67.8
7) Metal (7)	-133.2	38.4	-65.8	-2.1	-162.7
8) Chemical (8)	-23.9	9.3	- 9.1	-4.6	-28.3
9) Miscellaneous (3)	-13.5	28.3	-25.7	-2.6	-13.5
<u>All Firms Combined (57)</u>	<u>-46.6</u>	<u>23.8</u>	<u>-36.7</u>	<u>-7.8</u>	<u>-67.3</u>

*Expressed as a percentage of the profit before tax for the period where positive figures indicate increases to earnings and negative amounts reflect decreases to earnings.

Figures in the bracket are number of companies in the industry included in the sample.

Table 4

Percentage Change in Earnings due to General
Price-Level Adjustments

(Total No. of Companies 57)

	Total Period I	Low Inflation Period II	High Inflation Period III	Deflation Period IV
Maximum Loss	-244	-259	-202	-2317*
Maximum Gain	+49	+44	+261	+9
Average	-33	-21	-27	-67
Median	-27	-18	-27	-47

* This is abnormally high figure due to extremely low PBT for a company, which resulted in a high percentage.

Negative indicates decrease in income (loss).
Positive sign indicates increase in income (gain).

Table 5Top Five Gainers and Losers

(For the period January 1970 to December 1976)

	<u>% Change in FBT</u>
<u>Losers</u>	
1. The India Cements Ltd.	-244
2. Hindustan Motors Ltd	-223
3. Tata Iron & Steel Co Ltd	-134
4. Hindustan Aluminium Co Ltd	-131
5. TELCO	-99
<u>Gainers</u>	
1. Ratnakar Shipping Co Ltd	+49
2. Bombay Suburban Electric Co Ltd	+43
3. National Organic Chemicals Ltd	+16
4. Andhra Valley Power Supply Co Ltd	+14
5. Tata Power Co Ltd	+14

Table 6

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Some Important Financial Indicators
(Averages over the period 1970-76)

Industry	1	2	3	4	5	6	7	8	9
	% Change in Profit Before Tax (PBT)	Adjusted Depreciation as % of historic depreciation	Average Asset Life	Days' purchase contained in the inventory held	Debt/Equity	Earnings/Dividend	Adjusted Earnings/Dividend	Tax/PBT	Tax/Adjusted PBT
1. Utilities (11)	-4.6	174	8.6	29	1.24	3.4	3.2	.23	.24
2. Cement (3)	-58.3	206	11.1	72	.41	1.8	-.4	.49	1.18
3. Cotton Textiles (9)	-48.1	202	10.3	60	.44	2.5	.1	.46	.89
4. Other Textiles (5)	-27.6	176	7.6	49	.25	3.9	1.8	.48	.66
5. Paper (4)	-24.1	184	9.5	62	.31	3.5	1.7	.51	.67
6. Engineering (7)	-43.3	181	7.1	74	.65	2.8	.4	.48	.85
7. Metal (7)	-71.9	212	8.5	73	.52	2.1	-.7	.42	1.49
8. Chemicals (8)	-8.4	152	7.1	64	.60	2.9	2.5	.32	.35
9. Miscellaneous (3)	-28.2	182	8.3	45	.14	1.5	.5	.59	.82
Average for all firms (57)	-32.6	184	8.5	57	.55	2.7	1.1	.42	.62

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