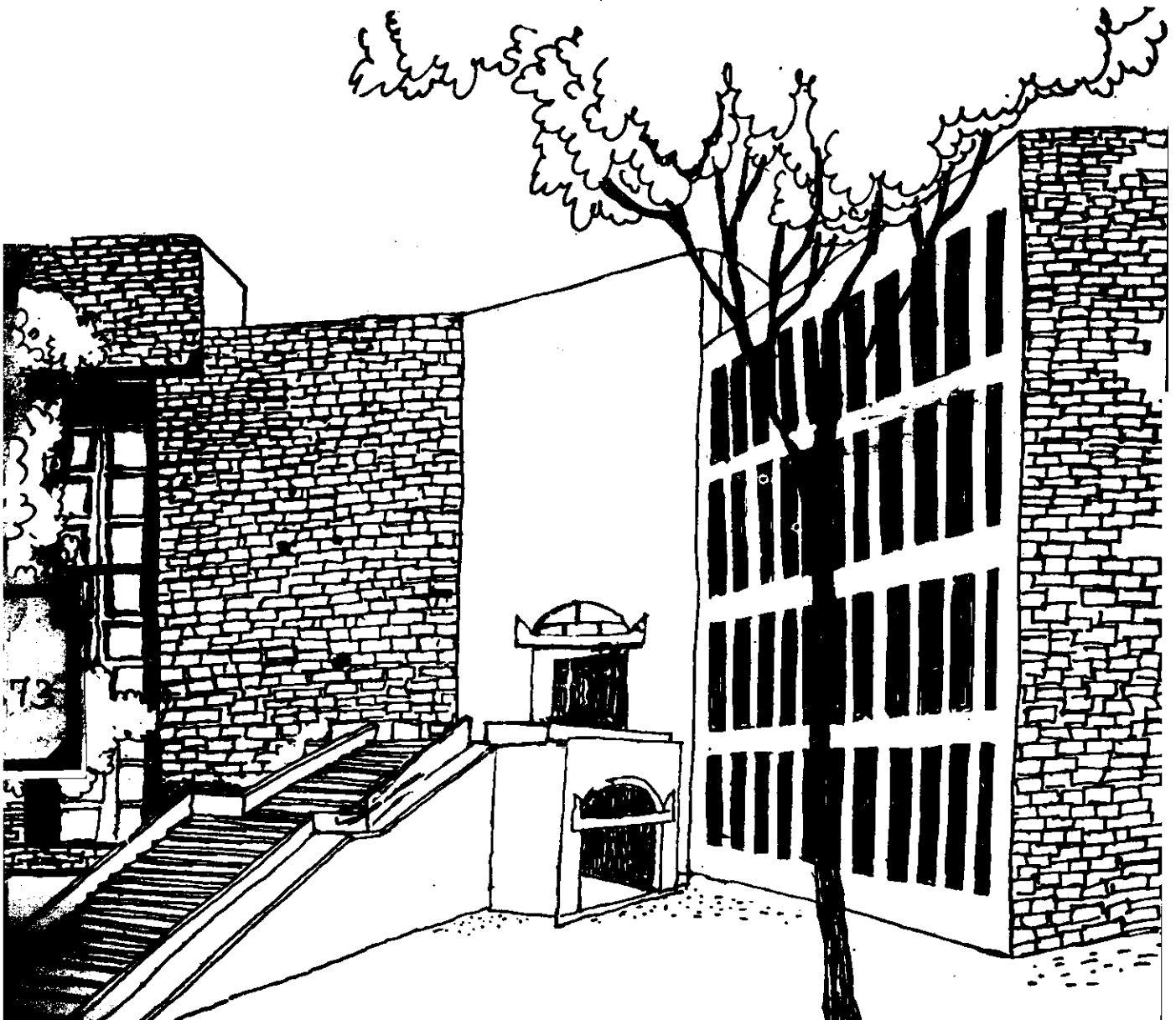


Working Paper



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DEPRECIATION: AN EMPIRICAL STUDY

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INCIDENCE OF DEFERRED TAX DUE TO DEPRECIATION
AN EMPIRICAL STUDY

by : Shweta Parikh*
and
G. Srinivasan*

The accounting policies adopted by a corporation may depend on the objectives and purpose of reporting. Broadly, we can classify the reporting requirements into three categories:

1. Internal reporting
2. External Reporting; and
3. Tax reporting.

Internal reporting is primarily to provide information for various management decisions. The external reporting is for various stake holders and are given primarily by the Generally Accepted Accounting Principles. The tax reporting is for assessment of tax liability and is governed by the statutes governing tax. As the objectives of each reporting is different the accounting policies need not be the same. For example tax authorities keeping variety of broader ^{national} natural objectives may not ~~dis~~allow some expenses. The disallowance of interest above certain limit on public deposits, or a portion of advertising, which were the case some years back, fall in this category. However, while reporting to

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stake holders these will legitimately form part of expenses. There are number of such differences which result in a substantial difference between the income reported in financial accounts and the income reported for tax purposes. Such difference can be classified into two categories:

1. Permanent difference is one that results in items that enter in only one of the income statements prepared for either income tax or financial accounts. These arise from expenses not allowed by tax, weighted deduction of expense for tax purposes etc.
2. Timing difference is one that arises from items the total amount of which will be same for both tax and financial accounting ^{but} by their timing is different. This may arise due to difference in accounting treatment for tax and accounting purposes. For example, there may be certain items which may be capitalised for reporting purposes but expensed for tax purposes. The amount of expense will be same in both the cases but under capitalisation it will be distributed over years.

The timing difference poses a problem of mismatch of accounting income and taxable income. The tax liability is computed on the basis of taxable income and the same liability is used for arriving ^{at} after tax reporting profit. Thus, the before tax profit bears no relation to the tax liability due to the timing and permanent differences. Whenever the pre-tax income in financial accounting is more than taxable income the tax reported in financial statements ~~are~~ ^{is} less than the tax associated with the reported pre-tax profit and in situations where taxable income is more than pre-tax income in financial statements the liability is more than the tax associated with the income. Thus there is a mismatch between profit before tax and tax expense. To take care of this tax deferral accounting is recommended in UK and USA. Under such a method the financial accounting will show a tax expense commensurating with the profit before tax reported. The difference between the tax arrived in the financial accounts and the tax accounts are routed through tax deferral account. However, in India tax deferral accounting is not followed by companies.

One of the major items that causes differences in taxable and reporting income is the difference in the method of depreciation followed for tax accounting and financial accounting. For tax purposes depreciation on written down

value is the prescribed method whereas for financial reporting companies are not required to follow the same. Good number of companies in fact follow straightline method of depreciation. In the initial years the depreciation under written down value may be more than that of straight-line but in later years it will be lower.

In this study we have looked into the incidence of tax deferral due to depreciation methods for a set of companies. Specifically we looked into the following aspects:

1. The extent of tax deferral over a period of four years
2. The impact of tax deferral on the effective tax rate and the overstatement of income
3. The trend of overstatement over four years.

Next section discusses the sample and methodology. Section Three presents the analysis followed by summary and implications.

2. Sample and Methodology

This study is based on a sample of thirty companies studied over a period of four years. These companies belong to the top one hundred companies of the country. The sample is restricted by availability of data. Companies in general do not reveal their accounting policies and, therefore, it is not easy to identify whether depreciation

method followed is written down value or not. However, under section 350 of the Companies Act, for computation of managerial remunerations companies are allowed depreciation as per tax laws. Therefore, if a company followed any other method and the depreciation charged in the financial accounts are different, information was available as to the depreciation chargeable for tax purposes and depreciation charged for reporting purposes. Information availability was a major constraint on the sample size. Within such constraints we were in a position to get data for thirty companies. Four years were studied so that one can observe the originating and the reversing effect of the tax deferral.

Whenever the depreciation for tax purposes is more than that charged in the accounts the actual tax expenses will be lower than the tax on reported income. In such a situation tax deferral accounting demands recognition of tax expense now and create a deferred tax liability. This is called originating difference. Later when tax depreciation is lower the position is exactly reverse. The deferred tax liability is reduced. This is called a reversing difference.

All the companies in our sample followed a straight-line method of depreciation. The deferred tax for each company for each year was computed as follows:

$$DT = T(W-S)$$

where,

DT = Deferred Tax

T = Tax rate

W = Written down value depreciation and

S = Straightline depreciation.

The list of companies studied ^{is} ~~are~~ given in Table 1.

Analysis of Data

The tax deferral computed by the above formula can be positive or negative depending on whether it is originating or reversing. If four year is a cycle within which the originating tax deferral reverses and if no further originating difference occurs then the expected value of the total of tax deferral is zero. To check whether reversals occur within a span of four years and to see whether companies continue to accumulate deferred tax liability we computed the tax deferrals for each year for all the companies and the total of tax deferrals over four years. The frequency distribution of aggregate tax deferral for four years is given in Table 2.

As seen from the table the total was positive for 23 companies and negative for 7 companies. Looking at the year to year tax deferrals we observed that in 17 companies there was net originating difference in each of the four years. The number of reversals in the entire sample was

much below. If the reversals and originating deferrals are equally likely then the number of reversals and originating deferrals one would have expected was 60 each. From the observations it is clear that originating differences are far more in number than the reversals.

Corporations by not accounting for tax deferrals report a tax liability which does not commensurate with the pretax profit. In other words the effective tax rate is different from the tax rate prevailing at that time. Depending upon whether the deferral is originating or reversing the effective tax rate will be lower or higher. The effective tax rate for sample companies is given in Table 3.

The important aspect of not providing for tax deferral is the over/under statement of reported income. To ascertain the extent of overstatement or understatement, we computed overstatement index which is given by -

$$OI = \frac{PAT}{PAT-TD}$$

where OI is the overstatement

PAT is the project after tax as reported

TD is tax deferral not provided for.

The frequency distribution of the overstatement index is given in Table 4.

From Table 3 we observe that not providing for deferrals has reduced the effective tax rate considerably in a number of cases. This also is reflected in number of companies overstating the reported income. The overstatement was even more than 50% in some cases which clearly highlight the magnitude of the distortion.

To check whether companies maintain the relative position in overstatement we ranked the companies according to OI. We used Kendall's coefficient of concordance (1) to test whether the relative positions are maintained across years. Kendall's coefficient is arrived by :

$$W = \frac{S}{\frac{1}{12} K^2 (N^3 - N)}$$

where

K = number of years over which ranking is done

N = number of companies ranked; and

S = sum of squares of the observed deviations of the sum of ranks from the mean of sum of ranks.

Using the above formula we computed the Kendall's coefficient of concordance (W) which turned out to be .7455. To test the statistical significance we computed the test statistic χ^2 given by

$$\begin{aligned} \chi^2 &= K(N-1)W \\ &= 4 \times 28 \times .7455 = 83.496 \end{aligned}$$

the probability that
 Under the null hypothesis ~~the~~ ranks across years are
 unrelated is less than
 .001. Therefore, the null hypothesis is rejected.

Thus, the above analysis indicate the following:

- a) The tax deferred due to difference in depreciation methods is significant
- b) The impact of such deferral on the effective tax rate and overstatement of income is also significant.
- c) The companies on an average maintain their relative position in the extent of overstatement dimension across years.

The study clearly highlights the extent of tax deferral which is ignored by the corporations. Though we have studied only one of the causes, depreciations, the extent of deferral due to this factor alone is significant. Because of tax deferrals we observe companies which pay no tax but show profit for reporting purposes. Instead of tackling this problem through accounting method unfortunately the government has come up with provisions in the Finance Bill (Sec. 115J). Under Sec 115 J companies have to pay a minimum tax ^{on} 30% ^{of} their book profits. Ostensibly this is a measure to prevent companies distributing sumptuous dividend and not paying tax. However, the same can be achieved by enforcing companies to follow tax deferral

accounting and the profit distributable should be after tax deferral. This way if the company has zero taxable income due to timing difference there will still be tax provision which will be retained by the company. The accelerated depreciation and other fiscal incentives are given with specific purpose of encouraging investment. In their enthusiasm to prevent zero tax company from showing reporting profit, the government should not lose track of the purpose behind the various tax deductions. The very purpose of increasing the depreciation rates will be defeated if substantial benefit is taken away by the provisions of Section 115 (J).

Reference

1. Siegel, Sidney. Non-Parametric Statistics for the Behavioural Sciences, Tokyo, McGraw Hill, Kogakusha Ltd., 1956.

Table 1

List of Companies Used As Sample

1. Alembic Glass Works Limited
2. Chloride India Limited
3. Colour-Chem Limited
4. Dharamsi Morarjee Chemical Company Limited
5. Elecon Engineering Company Limited
6. Electrical Manufacturing Company Limited
7. EMC Steelal Limited
8. Enfield India Limited
9. Goodlass Nerolac Paints Limited
10. Glaxo Laboratories India Limited
11. Guest Keen Williams Limited
12. Indian Aluminium Limited
13. IDL Chemicals Limited
14. Jyoti Limited
15. Kesoram Industries and Cotton Mills Limited
16. Kirloskar Cummins Limited
17. Kelvinator India Limited
18. Motor Industries Company Limited
19. Peico Electronics and Electricals Limited
20. The Bombay Dyeing and Manufacturing Company Limited
21. The Tata Engineering and Locomotive Company Limited
22. The Baroda Rayon Corporation Limited
23. The Atul Products Limited
24. The Hindustan Motors Limited

(Table 1 contd.)

25. The Hindustan Construction Company Limited
 26. The English Electric Company of India Limited
 27. The Delhi Cloth Mills Company Limited
 28. Vazir Sultan Tobacco Company Limited
 29. Wimco
 30. Walchandnagar Industries Limited
-

Table 2

Frequency Distribution Showing the Extent of Tax Deferred
(reversed) in Lakhs Over the Period 1981-1984

<u>Tax deferred (reversed) in lakhs</u>	<u>No. of Companies</u>	<u>Sl. No. of Companies as per Table 1</u>
(300) to (200)	1	(27)
(200) to (100)	1	(1)
(100) to 0	5	(18, 3, 9, 30, 26)
0 to 100	7	(13, 6, 7, 28, 15, 4, 23)
100 to 200	4	(11, 10, 12, 2)
200 to 300	8	(29, 14, 20, 17, 25, 8, 19, 5)
300 to 400	1	(16)
400 to 500	1	(22)
500 to 600	-	-
600 to 700	-	-
700 to 800	-	-
800 to 900	-	-
900 to 1000	-	-
Above 1000	2	(24, 21)
	30	

Table 3
Frequency Distribution of the Effective Tax Rate for
1981 to 1984

Effective Tax Rate	Number of Companies			
	1981	1982	1983	1984
Negative	-	1	1	1
0 - 5%	-	-	-	-
5 - 10%	-	-	-	1
10 - 15%	-	-	-	1
15 - 20%	-	1	1	-
20 - 25%	-	-	-	-
25 - 30%	2	1	1	-
30 - 35%	-	1	3	1
35 - 40%	-	-	3	2
40 - 45%	4	5	4	4
45 - 50%	3	2	1	3
50 - 55%	7	5	5	7
55 - 60%	12	11	5	5
60 - 65%	1	3	3	3
65 - 70%	1	-	-	1
70 - 75%	-	-	2	-
75 - 80%	-	-	-	1
	30	30	29*	30

*One observation has been omitted as there was a loss in that case.

Table 4

Frequency Distribution for the Overstatement Index

Overstatement Index	Number of Companies			
	1981	1982	1983	1984
.75 - .80	-	-	2	-
.80 - .85	-	-	-	2
.85 - .90	1	1	-	-
.90 - .95	2	2	2	2
.95 - 1.0	8	9	6	5
1.0 - 1.05	5	3	1	1
1.05 - 1.10	5	3	1	4
1.10 - 1.15	3	3	2	5
1.15 - 1.20	3	2	3	3
1.20 - 1.25	1	1	2	1
1.25 - 1.30	-	1	2	-
1.30 - 1.35	-	1	1	-
1.35 - 1.40	-	-	-	2
1.40 - 1.45	2	1	3	1
1.45 - 1.50	-	2	2	1
Above 1.50	-	1	2	3
	30	30	29*	30

*One observation has been omitted as there was a loss in that case.

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