
A Statistical Investigation of the Effects of Size on Income Smoothing Behaviour of Companies Listed In NSE

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Abstract

Objectives. Financial reporting is a process of communicating financial information of the companies to different stakeholders. Financial reporting process of companies has been constantly facing the problem of satisfying different stakeholders with diverse needs and desires. Satisfaction of one's needs leads to the dissatisfaction of others. In order to satisfy all kind kinds of stakeholders, there is a need to maintain a balance between the two extreme points i.e. higher profit and lower profit. Due to various reasons like increasing level of competition and loopholes in the accounting standards, Companies are using different techniques of Creative Accounting to manipulate the Accounts. There are various forms of Creative Accounting. Income Smoothing is one type of Creative Accounting. In this study, it has been tried to determine the existence of Income Smoothing in the Companies listed in India and the association between the size of the companies and the Income Smoothing practices of Companies has also been studied.

Methods: Eckel Index has been calculated to detect the existence of Income Smoothing practices of Companies. Inferential Statistics like Chi Square Test and Binary Logistic Regression Model has been conducted.

Findings: Results show that Income Smoothing is prevalent among the Companies listed in India and Size of the Companies has been found as a significant factor affecting Income Smoothing Behaviour.

Keywords: Accounting, Accounting Standard, Creative Accounting, Income Smoothing.

1.1 Introduction: Financial reporting is a process of communicating financial information of the companies to different stakeholders. Financial reporting process of companies has been constantly facing the problem of satisfying different stakeholders with diverse needs and desires. Satisfaction of one's needs leads to the dissatisfaction of others. In order to satisfy all kind kinds of stakeholders, there is a need to maintain a balance between the two extreme points i.e., higher profit and lower profit. To maintain this balance, the accountant adopts different techniques of creative accounting. Creative accounting is a technique of manipulating the financial reports of the business according to the needs of the company.

There are different definitions of creative accounting given by different researchers. Some of them are listed below:

According to Barnea *et al* (1976), Creative Accounting is an intentional decreasing of fluctuations in the earnings which is considered as normal for the Firm. ¹

According to Griffiths (1986), All the financial reports of the companies are cooked to a certain extent or to a large extent. The companies change the figures which are presented to the interested public in order to hide the actual picture of the company. This technique is compared with the story of the Trojan horse..... This approach of manipulation of accounts is considered appropriate. This is called Creative Accounting. ²

In the opinion of Schipper (1989), Creative Accounting can be termed as “Disclosure Management”. This is a manipulation of Financial Reporting Process³.

There are various forms of Creative Accounting. Income Smoothing is one type of Creative Accounting. Ronen and Sadan (1981): “*Income smoothing is a deliberate attempt by management to signal about future earnings to the users of the financial statements.*”⁴

1.2 Objectives:

The following objectives are considered for the study.

1. To detect the existence of Income Smoothing practices among the companies selected for the study.
2. To find out the effect of company Size on the Income Smoothing practices.

1.3 Scope of the Study:

Companies listed in the National Stock Exchange of India are included in the present study

1.4 Hypotheses:

H₀₁: Income Smoothing practice is not present among the listed companies in India.

H₀₂: Income smoothing is not dependent on the Company Size.

1.5 Research Methodology:

1.5.1 The Size of the Population has been changing continuously since many new companies are listed and some existing companies are delisted. The total population of the study is 1627 companies which are listed in NSE as on 28th February 2013. The finance sector companies are having special characteristics and therefore they have been not been included in the study. Therefore, the population for the study stands at 1471. This number is fixed after the exclusion of finance sector companies.

1.5.2 The Method of Data Collection adopted has been selected taking into consideration the objective of the present study. Annual reports of the companies are the primary source of data which are collected through internet. For conducting the research work, secondary data have also been used. Secondary data have been collected from various sources like books, company websites, research journals, internet etc. Data have been collected for a duration of ten (10) years i.e., 2003-2004 to 2012-2013.

Cochran's⁵ sample determination formula has been used for the present study and the sample has been calculated as 230.

1.5.3 Size of the Company- The size of the company for the study has been divided into 3 (three) categories based on the market capitalization viz small size, medium size and large sized companies.

The categorization of the companies is as follows-

- Small-upto Rs.2000 crore
- Medium-Rs 2001 to Rs 10000 crore
- Large- Above Rs 10000 crore

1.5.4 Measuring income smoothing

For the present study, a company is termed as a non-smoother even if-

$$CV_{\Delta I} \approx CV_{\Delta S} \text{ i.e., } \frac{CV_{\Delta I}}{CV_{\Delta S}} \approx 1$$

In the present study, the ratio of coefficient of variation (CV) of Profit after Tax (PAT) to coefficient of variation (CV) of sales are used as Eckel's Index⁶ (Income-Smoothing Detector) to classify as smoother companies and non-smoother companies.

1.6 Smoothing Status of Companies Using Ratio of PAT and Sales:

Eckel's Index has been calculated to find out the existence of Income Smoothing practices and for this, the ratio of Profit after Tax and sales is used. Out of the total 230 sample companies 51(22.17%) companies are detected as non-smoother because the Eckel's Index is approximately equal to 1 in case of these 51(22.17%) companies. On the other hand, 179(77.83%) are detected as smoother as Eckel's Index for these companies are either greater than 1 or less than 1.

Figure 1.1: Smoothing Status Classification on PAT

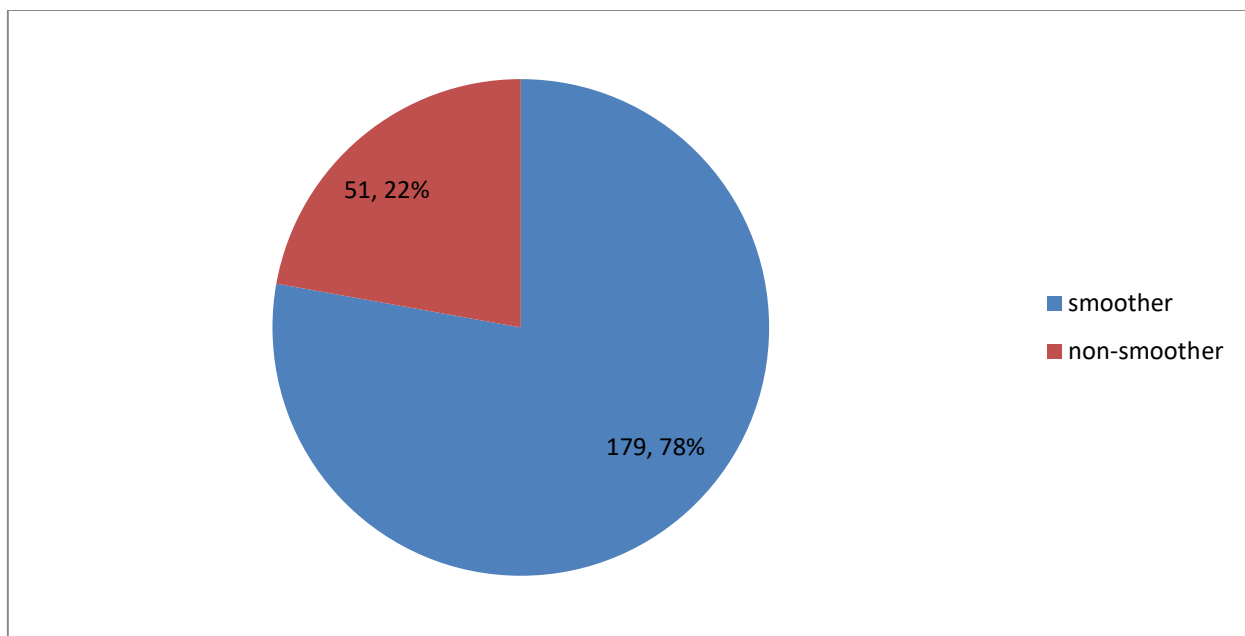


Figure 1.1 shows the existence of income smoothing practices in India. The findings of the study also show that the number of incomes smoothing companies are more than the non-smoothing companies.

In order to infer that income smoothing existence is significant in listed companies in India, Z test for proportion has been applied. Results found in case of listed companies in India have been compared with the results found in the similar studies undertaken by Khairul Anuar Bin Kamarudin et al (2000)⁷ among the companies listed in the Kuala Lumpur Stock Exchange and by Fatemeh Mohebiet al (2013)⁸ among the companies listed in Tehran Stock Exchange. Both these studies have been selected as a benchmark for inferring regarding presence of income smoothing in Indian listed companies. These studies were selected on the basis of their similar nature of work. While selecting the studies, due consideration has been given to the time period. Effort has been made to include one old and one recent study for comparison. Moreover, two Asian countries have been selected for comparison

TABLE 1.1: Result of the Z-test for Comparison using Study Undertaken in the Year 2000 on PAT

STATUS	PRESENT STUDY	PREVIOUS STUDY (1981)	Z-TEST STAISTIC	P VALUE
Smoother	179(77.83%)	33(29%)	5.68	0.000 < 0.05
Non-Smoother	51(22.17%)	81(71%)		
Total	230(100%)	114(100%)		

Source: Survey

In the above table 1.1, Z-test has been conducted to test the 1st hypothesis of the study and the level of significance is 5%. It has been observed from the test that the proportion of smoother company is significantly higher in case of listed companies in India in comparison to the companies listed in Kuala Lumpur Stock Exchange as the p value here is 0.000 which is less than 0.05.

Here the p value is much lower than the significance level and therefore, the null hypothesis has been rejected and inferred that the Income Smoothing is existing in the listed companies in India and the proportion of companies indulged in Income Smoothing practices is significantly higher in case of companies listed in India.

TABLE 1.2: Result of the Z-test for Comparison using Study Undertaken in the Year 2013 on PAT

STATUS	PRESENT STUDY	PREVIOUS STUDY(2013)	Z-TEST STAISTIC	P VALUE
Smoother	179(77.83%)	59(48.76%)		

Non-Smoother	51(22.17%)	62(51.24%)	4.28	0.000 < 0.05
Total	230(100%)	121(100%)		

Source: Survey

In the above table 1.2, Z-test has been conducted to test the 1st hypothesis of the study and the level of significance is 5%. It has been observed from the test that the proportion of smoother company is significantly higher in case of listed companies in India in comparison to the companies listed in Tehran Stock Exchange as the p value here is 0.000 which is less than 0.05. Here the p value is much lower than the significance level and therefore, the null hypothesis has been rejected and inferred that the Income Smoothing is existing in the listed companies in India and the proportion of companies indulged in Income Smoothing practices is significantly higher in case of companies listed in India.

Table 1.3: Results of Chi-Square Test

FACTORS			STATUS			p-value
			NON-SMOOTHER	SMOOTHER	TOTAL	
SIZE	LARGE	NUMBER	7(35%)	13(65%)	20(100%)	0.234 > .05
	MEDIUM	NUMBER	7(28%)	18 (72%)	25(100%)	
	SMALL	NUMBER	37 (20%)	148(80%)	185(100%)	
	TOTAL	NUMBER	51(22.2%)	179 (77.8%)	230(100%)	

Source: Survey

From the above Table 1.3, it is observed that the Chi-square test has been conducted to test the 2nd hypothesis of the study and level of significance is 5%. From the test, it has been found as evident in the table that smaller companies are higher smoothers of income (80%) in comparison to companies (medium size) (72%) and companies (large size) (65%). From the above analysis, it can be concluded that there is a no significant relationship between the size of the company and income smoothing as the p value here is 0.234 which is higher than the significance level of 5% (0.05). Therefore, it can be inferred that smaller companies have greater tendency towards Income Smoothing in comparison to medium and large companies.

Table 1.4: Showing Results of Univariate Binary Logistic Regression Model for the Factor Size on PAT

Category	Wald Statistic	P value	Odds Ratio
Large Size (Reference)	2.828	0.243	
(Medium Size)	.253	0.615	1.385
(Small Size)	2.322	0.128	2.154

Source: Survey

In the table, it can be observed that there are three columns with the values of Wald Statistics, P value and Odds ratio. Large sized companies are treated as reference category in the model. The odds ratio reveals the extent of smoothing.

From the odds ratio, it is evident that the smoothing is approximately 1 ½ times higher in case of medium size companies and approximately 2 times higher in case of small companies in comparison to the companies which are large in size. The p value 0.615 which is higher than the significance level of the study .05 shows that the fact that smoothing in medium sized companies is about 1 ½ times higher than the large companies is not statistically significant and it means that it might not be true to the whole population. Again, P value (0.128>0.05) depicts that the fact that smoothing in small sized companies is about 2 times higher than the large size companies is also not statistically significant and it means that it might not be true to the entire population.

Findings:

The 1st hypothesis of the study deals with the question whether income is existing in the Companies listed in India. From the calculation of Eckel Index and Z test of proportion, It can be concluded that income smoothing is existing in the Companies listed in India.

The second hypothesis is that Income Smoothing is independent of size of the companies. To test the above hypothesis, The Chi-Square Test, and Binary Logistic Regression Model has been conducted to detect any significant differences between companies that are involved in smoothing of their income and companies that do not. The chi-square test showed that, the percentage of Income smoothing companies are higher in case of companies of small size but the size has not been observed as a significant factor that affects Income smoothing of companies. Binary Logistic Regression Model also presented similar type of results.

Conclusion: Accounting is not like physical sciences. In the process of preparing financial reports, Accountants has the opportunity of using his own discretion while selecting between the alternative methods. However, application of Income Smoothing or any other techniques of Creative Accounting may not be harmful if used with proper intention and methods but if

adopted to a large extent, it may portray a picture of the company which is actually not true in the eyes of the Investors. This will negatively affect the decision-making process of the investors.

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