# Investigation on the Presence of Income Smoothing–A Study on the Companies Listed in NSE

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*Strictly as per the compliance and regulations of:*

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This study investigates income smoothing as one of earnings management techniques. The topic of Income Smoothing has been studied with reference to the companies listed in the National Stock Exchange of India. Apart from studying the existence of Income Smoothing practice among the NSE listed companies, effort has also been made to study the factors that may affect the income smoothing.

Keywords: income smoothing, nse, earning management, financial reporting.

## I. Prologue

In today's world information and economic systems, given to the development of information technology, transmission and accurate reporting of related financial information reliable on decision making has particular important. However, shareholders, who give their savings in the form of investment to companies, have not any tools except the annual financial statements, reports and notes of companies for knowing how to manage their assets and ensure the accuracy of performance, efficiency and productivity of managers. Government also due to different reasons like ensuring the accuracy of funds and sources consumption income analysis through tax and so on requires an accurate, reliable financial reporting. On the other hand the accurate information from the results of various economic activities and certitude in the performance of accounting principles and standards and establishment of appropriate systems of information transmission in the form of financial reporting is considered effective factor in realizing prospects and economic programs of the country.

This study investigates income smoothing as one of earnings management techniques. Income smoothing is the utilization of accounting discretion to reduce income stream variability (Fudenberg and Tirole, 1995)[1]. Smoothing moderates year-to-year fluctuations in income by shifting earnings from peak years to less successful ones, making earnings fluctuations less volatile (Copeland,1968)[2.] As a simple definition, income Smoothing is a kind of intentional act committed by managers using special tools in accountancy for lowering profit fluctuations. Low profit fluctuations create a more favorable image in investors for investing in companies. Management of some companies deliberately manipulates items of financial statements in order to attract attention of investors aimed at pretending that their profitability is stabilized.

## II. Smoothing: Motivation and Effects

Income smoothing, which Arthur Levitt labeled ''cookie jar'' accounting in his 1998 speech, is not a new issue. Gordon (1964) predicts that as long as managers have discretion over accounting choices, they smooth reported income. His prediction was tested in several studies. By the late 1970s, evidence for income smoothing was plentiful (Beidleman 1973; Ronen and Sadan 1981). In a recent study, Graham et al. (2005) report, ''an overwhelming 96.9% of the survey respondents indicate they prefer a smooth earnings path. Managers may smooth reported income to meet the bonus target (Healy 1985) or to protect their job (Fudenberg and Tirole 1995; Arya et al. 1998)[3].

Gordon et al., (1966)[4] suggested four hypotheses for income smoothing

1. Managers' measure for selecting among different accounting methods is maximizing desirability or managers' welfare.
2. Managers' welfare or desirability is a function of job security, growth level and rate of bonus and

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management salary and growth level and rate of firm size.

3. Desirability or welfare of management depends on stockholders' satisfaction of firm performance. So, if other things are equal, as stockholders become more satisfied, job security, position, earning, and managers' bonus are higher.

4. Satisfaction of stockholders depends on stability of growth rate of earning.

## III. REVIEW OF LITERATURES

Michelson *et al,* (2000) used risk-adjusted returns for the firms in the S& P 500 to test whether the stock market response to accounting performance measures is related to the smoothness of companies reported earnings. The conclusion of the study revealed that companies that report smooth income have significantly higher cumulative average abnormal returns than firms that do not. When size is considered, market returns are higher for small companies than for large companies. There is also significant relationship between type of industry and income-smoothing[5]

Jennifer W. Tucker, *et al,* (2006) examined whether income smoothing garbles earnings informs or improves the informativeness of past and current earnings about future earnings and cash-flows. The result revealed that the change in the current stock price of higher – smoothing firms contains more information about their future earnings than does the change in the stock-price of lower-smoothing firms.[6]

Andersson *et al,* (2002) examined the income-smoothing behavior of small Swedish firms by studying the impact of financial and contextual variables on income-smoothing in terms of how they appropriate funds to Accumulated Excess Depreciation Reserve (AEDR). Their results indicated that it is more probable for firms to appropriate to the AEDR if a firm is small and medium sized firm compared to singles and micro firms, profitable and capital intensive, the firm is newly established and its is operating in industries like manufacturing, wholesale and retail trade industry. They also found that firms which appropriate or have appropriated to Tax Allocation Reserve (TAR) are much more probable also to appropriate to AEDR.[7]

Shamsul *et al,*(2002) examined on whether Extra ordinary item(EI) disclosure were associated with income-smoothing behavior and the extent to which disclosure of Extra-ordinary item was related to political cost, gearing and management interest. The study found that the incidence EI was very high. However, the results showed no evidence of management using EI as a tool to smooth income. Further EI disclosures were not explained by political cost, gearing and management interest.[8]

Khairul *et al* examined the relationship between income-smoothing practices and firms value in Malaysia.

This research also studied the effect of firm size on the tendency to smooth income. The result of the study indicated that income smoothing was present although its percentage is low. It also found that smaller firms have greater tendency to smooth income rather than larger firms.[9]

Apart from the above mentioned studies, previous studies have also investigated income smoothing instruments such as dividend incomes, changes in accounting polices, pension cost, investment tax credit, depreciation and fixed charges, discretionary accounting decision and many other possible income-smoothing tools.

Gordon *et al,* (1966) examined the relationship between the method of accounting for investment tax credits (income-smoothing instrument) and the growth rates of earnings per share and the returns on the stockholders' equity (income smoothing objective). The results of the study indicated a significant relationship between the two, suggesting the existence of income-smoothing practices.[10]

Archibald (1967) studied on depreciation methods and Cushing (1969) on accounting changes. Dascher, *et al,* (1970), Barnea *et al,*(1975) and Ronen, *et al,* (1975) studied on extra ordinary items also reported income smoothing behavior among sample companies. Beidleman (1973) provided evidence to show that incentive compensation, pension and retirement expenses, research and development cost, sales and advertising expenses were also used by companies to smooth income. Ma (1988) concluded that banks used loan loss provisions and charge offs to smooth income. White (1970) studied the discretionary accounting decisions and could not detect any income smoothing behaviour among the sample companies.[11]

Several researchers have come out with different argument on determining the income-smoothing objective. Copeland (1986) suggested that net income as the ultimate aim of income smoothing. Imhoff (1981) suggested that possible measures of income – smoothing include fully diluted EPS, net income, net income before extra-ordinary items, operating income and gross margin. Beattie *et al,* (1994) claimed that profit before tax as the income-smoothing objective. In a more recent study conducted by Michelson, *et al* (2000), they assumed operating income after depreciation, pretax income, income before extra-ordinary items and net income as smoothing objective.[12]

Several studies have also looked at the possible determinants of income – smoothing such as company size, industrial sector, bonus scheme, barrier to entry and ownership. For example Smith (1976) and Kamin, *et al,* (1978) pointed out that compared to owner controlled companies, the manager-controlled ones tended to smooth income significantly more frequently. Ronen, *et al,*

(1981) concluded that companies in different industries smoothed their income in varying degrees. High degree of smoothing was found in the oil and gas and drug industries. Belkaoui and Picur (1984) found that companies in peripheral industrial sectors showed a greater incidence of income-smoothing behavior than companies in the core-industrial sectors. Moses (1987) found that income-smoothing was associated with company size, the divergence of actual earnings from expectations and the existence of bonus compensation plans. Ashari *et al,* (1994) found that income-smoothing is greater in less profitable companies and the income-smoothing is associated with the company size, the industry and the nationality of the companies.[13]

## IV. Research gap and Rationale of the Study

From the preceding section it transpires that study relating to Income Smoothing has not been extensively undertaken in the companies listed in the Indian Stock Exchanges. Moreover in the above studies factors influencing income/profit smoothing have not been studied. Taking these as research gap, effort has been made in this study to fill in the research gap and to add to the existing stock of knowledge. The topic of Income Smoothing has been studied with reference to the companies listed in the National Stock Exchange of India. Apart from studying the existence of Income Smoothing practice among the NSE listed companies, effort has also been made to study the factors that may affect the income smoothing.

## V. Objective of the Study

The present study has been undertaken taking into mind the following broad objectives-

i. To determine the presence of Income Smoothing.
ii. To determine the factors affecting Income Smoothing among the companies selected for the study

*Hypotheses:* The following null hypotheses have been framed for the present study:

*H01:* Smoothing practice is not prevalent among the listed companies in India.

*H02:* Extent and direction of smoothing do not depend on size of company.

*H03 :* Income smoothing is independent of nationality of the company.

*H04 :* Income smoothing is independent of private and public sector.

*H05:*Income smoothing is independent of manufacturing and service sector.

*H06:* Income smoothing is independent of family based and professionally managed companies.

## VI. Research Methodology

*Size of the Population:* During the tenure of the research study, the number of listed companies in the NSE as on 28th February 2013 has been 1627.The finance sector companies have been excluded from the study because of its unique characteristics of financial reporting practice. The number of listed companies in NSE after excluding finance sector companies stands at 1471. This has been taken as the population for the present study.

*Size of the Sample:* It has been decided on the basis of Cochran's model of sample determination. The sample has been fixed at 230 on the basis Cochran's sample determination table.

The sample data has been collected proportionately on the following company characteristics:
- Size of the Company-
- Manufacturing Companies
- Service Companies
- Nationality
- Public Sector Companies
- Private Sector Companies
- Family Based Companies
- Professionally Managed Companies

*Sampling Technique:* The present study requires the grouping of the population into sub groups for studying the factors affecting the income smoothing practice. Therefore, the stratified sampling technique has been used. The population has been divided into homogeneous subgroups. The sample has been 15.6 % (230) of the population (1471).The number of companies to be included in each category of sample has been decided on the basis of total sample proportion to the total population of the study i.e.15.6%.

## VII. Measuring Income Smoothing

To fulfill the objectives of the study and to test the hypotheses of the study, measurement of the income smoothing is required. According to Bao and Bao (2004) research on the use of income smoothing has been successful because researchers have been able to identify which companies use income smoothing and which companies do not use income smoothing. This implies that methods exists that successfully measure the use of income smoothing. According to Copeland (1968), three methods exits. First, researchers can inquire management, second researchers can contact third parties such as auditors, and third researchers can perform studies on ex post data. The majority of the academic research has chosen the third option; performed studies based on ex post data

In this research study, the procedure employed to determine the presence of Income Smoothing is the coefficient of variation method developed by Eckel

(1981). Eckel's method measures smoothing by aggregating the effects of potential smoothing variables and considering over time (Ashari et al 1994).This aggregation of variables is important, as Zmijeaski and Hangerman (1981) suggest that companies select accounting procedures, not independently, but based upon their overall expected effects on income.[14]

If, as is generally assumed, changes in income are the result of smoothing, then the coefficient of variation can be used as a measure of the variability of sales and other measures of income e.g. operating income (Imhoff 1977, 1981; Eckel 1981; Moses 1987). Several recent studies (Albrecht *et al* 1990; Ashari, *et al*; Wong 1994; Booth, *et al*, 1995; Michelson, *et al*, 1995) have used the coefficient of variation model to determine the presence of income smoothing. As per the model, a firm is not classified as an income smoother if [15]

$$CV_{\Delta I} \geq CV_{\Delta S}$$

where      $\Delta I$=One period change in income

        $\Delta S$=One period change in sales

        CV=Coefficient of variation

$$CV = \frac{\text{Standard Deviation}}{\text{Mean}}\left(\frac{\sigma}{a}\right)$$

The basic logic behind this Eckel's model is that if the variation of the change in sales is greater than the variation in change in income, the firm is considered to smooth income.

The actual objectives of income-smoothing with respect to the income statement have been interpreted in various ways. Some studies (e.g. Copeland 1968) suggest net income as the ultimate aim of smoothing. Ronen and Sadan (1975, 1981) propose that the object of smoothing is ordinary income. Imhoff's (1981) possible measures of income-smoothing include net income, operating income.[16] In the present study, the objective of income-smoothing is taken as Profit Before Tax (PBT)

The present study modified the original Eckel's model and assumes a company as non-smoother if

$$CV_{\Delta I} = CV_{\Delta S}$$

The logic behind this assumption is that if the income figure and sales figure of a company are taken over a period of time, then, the Coefficient of Variation of income i.e. the variation of change in income and the Coefficient of Variation of sales i.e. the variation of change in sales should be same. So the company where the $CV_{\Delta I} > CV_{\Delta S}$ or $CV_{\Delta I} < CV_{\Delta S}$, it will be considered as a smoother company.

In the present study, a company is considered 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 study, the ratio of CV of PBT to CV of sales is used as Eckel's Index (Income-Smoothing Detector) to identify the sample of the company's as smoother and non-smoother.

## VIII. Findings

*a) Descriptive Statistics*

Eckel's Index has been calculated as an indicator of income smoothing practice using ratio of Profit before Tax and sales. Out of the total 230 sample companies only 62(27%) companies are found to be non-smoother as in case of these 62(27%) companies, the Eckel's Index is approximately equal to 1. At the same time, out of the 230 companies, 168(73%) are found to be smoother as Eckel's Index for these companies are either greater than 1 or less than 1.
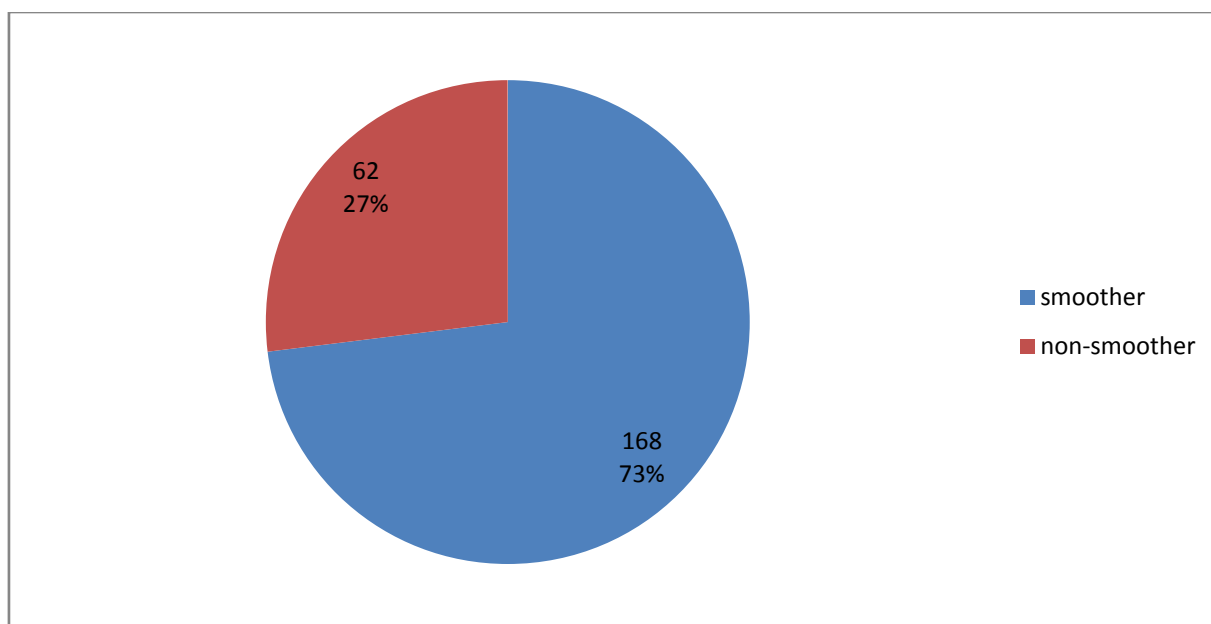
*Figure 1 :* Smoothing Status Classification on PBT

Figure 1 shows the presence of income smoothing activities in India. The findings also show that the number of smoothing companies has been higher compared to non-smoothing companies. These findings on the presence of income smoothing practices in India are consistent with Ashari et.al (1994) findings.

*Inferential statistics:* Inferential statistics is concerned with making predictions or inferences about a population from observations and analyses of a sample. That is, one can take the results of an analysis using a sample and can generalize it to the larger population that the sample represents. In order to do this, however, it is imperative that the sample is representative of the group to which it is being generalized. However, before using any statistical test, it is necessary to test for normality of the data set. The normality test of the data set has been done using Kolmogorov Smirnov test for normality. The results of the test are given below:

*Table 1:* Tests of Normality

|  | Kolmogorov-Smirnov(a) | | |
|---|---|---|---|
|  | Statistic | df | Sig. |
| Smoothing Index | .172 | 230 | .000 |

From the above Table 1, it can be seen that the data set of smoothing index has p value or Asymp. Sig (2 - tailed) less than .05 which means that the data set is not normally distributed. This can be illustrated through the following diagram:

## Normal Q-Q Plot of smoothing_index
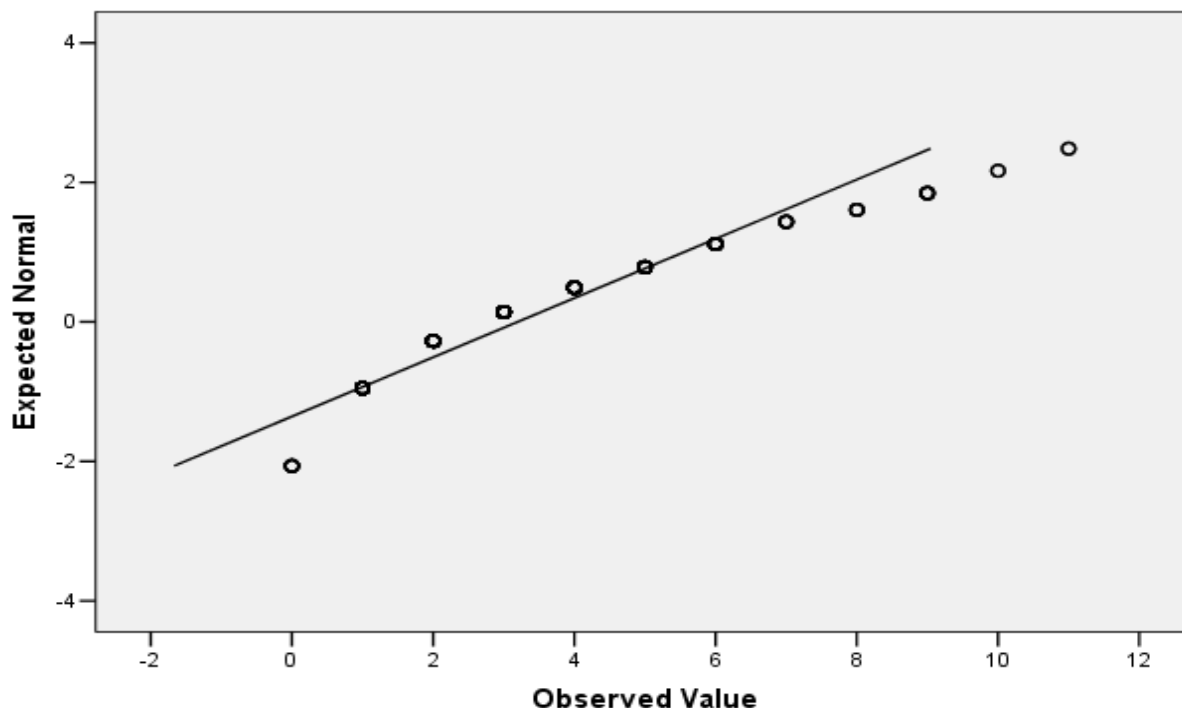


The sample data of 230 companies have been classified into smoother and non smoother on the basis of Ecke's index and this smoother and non smoother category has been considered as the status of the companies. In order to test the hypotheses, chi-square test has been used to see whether there is any association between the status of the company as smoother and non smoother and factors like size, nationality, sector, management. The results of the test are given below for each of the factors:

*Table 2 :* Results of Chi-Square Test

| FACTORS | | | STATUS | | p-value |
|---|---|---|---|---|---|
| | | | NON SMOOTHER | SMOOTHER | |
| SIZE | LARGE | NUMBER | 11(55%) | 9(45%) | .005<.05 |
| | MEDIUM | NUMBER | 9(36%) | 16 (64%) | |
| | SMALL | NUMBER | 42 (22.7%) | 143(77.3%) | |
| | TOTAL | NUMBER | 62(27%) | 168 (73%) | |
| NATIONALITY | MNC | NUMBER | 6(46.2%) | 7(53.8%) | .108>.05 |
| | INDIAN | NUMBER | 56(25.8%) | 161(74.2%) | |
| | TOTAL | NUMBER | 62(27%) | 168(73%) | |
| SECTOR (PRIVATE & PUBLIC) | PUBLIC | NUMBER | 3(50%) | 3(50%) | |

| | | | | | |
|---|---|---|---|---|---|
| | PRIVATE | NUMBER | 59(26.3%) | 165(73.7%) | .197>.05 |
| | TOTAL | NUMBER | 62(27%) | 168(73%) | |
| SECTOR (MANUFACTURING & SERVICE) | SERVICE | NUMBER | 7(25. 9%) | 20(74.1%) | .898>.05 |
| | MANUFACTURING | NUMBER | 55(27.1%) | 148(72. 9%) | |
| | TOTAL | NUMBER | 62(27%) | 168(73%) | |
| MANAGEMENT | FAMILY | NUMBER | 8(24.2%) | 25(75.8%) | .704>.05 |
| | PRFESSIONALLY MANAGED | NUMBER | 54(27.4%) | 143(72.6%) | |
| | TOTAL | NUMBER | 62(27%) | 168(73%) | |

From the above Table 2, it can be seen that the Chi-square test has been done to test each of the hypotheses under study at 5% level of significance. The results of the test revealed that there is a significant relationship between the size of the company and income smoothing as the p value here is .005 which is less than .05.The results revealed that smaller companies have greater tendency towards smoothing as the percentage of smoother company is more in case of small sized companies . The results of the test showed that the Indian companies are more involved in smoothing of income as compared to MNC but there is no significant relationship between the nationality of the company and income smoothing as the p value here is .108 which is higher than .05.The results of the test also revealed that Income smoothing is independent of private and public sector company as the p value here is .197 which is higher than .05 although the percentage of smoothing is more in case of private sector companies. Similar results have been found for the companies falling under manufacturing and service sector and family based and professionally managed companies as the p values in both of the cases (.898 and .704) are much higher than .05 and  it can be said that Income smoothing is independent of manufacturing and service sector and family  and professional management.

The data set used for the Chi-square test is categorical in nature as the classification of the companies as smoother and non smoother has been used as the status of the company. This status of the company is used as dependent variable for the study. But to see the association between income smoothing index and factors taken for the study, another statistical test needs to be used.  Since the data set is not normally distributed as proved by the Kolmogorov-Smirnov normality test, the Mann-Whitney test has been used. Again Mann-Whitney Test is applicable in case there are only two independent sets of data sample but in case of factor size, there are 3 independent data sample viz large, medium and small and therefore for that data set instead of Mann-Whitney test, Kruskal-Wallis Test has been used. The results of the two tests are tabulated below:

*Table 3 :* Results of the Mann- Whitney Test

| Factors | N | Rank Average | Sum of Ranks | U | Z | p |
|---|---|---|---|---|---|---|
| MNC | 13 | 87.65 | 1139.5 | 1048.500 | -1.578 | .114 |
| Indian | 217 | 117.17 | 25425.5 | | | |
| Public | 6 | 62.08 | 372.5 | 351.500 | -2.024 | .043 |
| Private | 224 | 116.93 | 26192.5 | | | |
| Service | 27 | 118.2 | 3191.5 | 2667.500 | -.228 | .819 |
| Manufacturing | 203 | 115.14 | 23373.5 | | | |
| Family Managed | 33 | 122.03 | 4027.0 | 3035.000 | -.619 | .536 |
| Professionally Managed | 197 | 114.41 | 22538.0 | | | |

The first hypothesis of the Table 3 deals with the problem: Is there a significant difference between the income smoothing indexes of companies in the two groups, companies' falling under the category of MNC and companies' falling under the category Indian. In order to resolve this problem, the income smoothing index of the two groups of companies MNC and Indian

have been compared using Mann-Whitney U test, a non-parametric statistical technique.

An examination of the findings in Table 3 reveals the results of Mann Whitney U test that the Income Smoothing index of the companies in the two groups did not show any statistical difference (p=.114>.05). The rank average of the income smoothing index of the MNC group of company was 87.65, while the companies in the Indian group had an income smoothing index rank average of 117.17. The examination of the rank averages demonstrates that the companies in the Indian group had higher income smoothing index than those in the MNC group.

The second hypothesis of the Table 3 deals with the problem: Is there a significant difference between the income smoothing index of companies in the two groups, companies' falling under the category of public and companies' falling under the category of private. An examination of the findings in Table 3 shows that the Income Smoothing index of the companies in the two groups revealed a statistically significant difference at the level of p<.05 (p=.043<.05). The rank average of the income smoothing index of the public sector group of company was 62.08, while the companies in the private sector group had an income smoothing index rank average of 116. 93. The analysis of the rank averages reveals that the companies in the private sector group had higher income smoothing index than those in the public sector group.

The third and fourth hypothesis of the Table 3 deals with the problem: Is there a significant difference between the income smoothing index of companies in the two groups, companies' falling under the category of service sector and companies' falling under the category of manufacturing sector and Is there a significant difference between the income smoothing index of companies in the two groups, companies' falling under the category of family based and companies' falling under the category of professionally managed respectively.

An examination of the findings in Table 3 reveals the results of Mann Whitney U test that the Income Smoothing index of the companies in the two groups (in case of both third and fourth hypotheses) did not show any statistical difference ( p=.819>.05 and p=.536>.05 ). The rank average of the income smoothing index of the service sector group of company was 118.2, while the companies in the manufacturing sector group had an income smoothing index rank average of 115.14. The close rank averages of the groups' income smoothing index indicate that both the groups had somewhat equal income smoothing index levels. Again, the rank average of the income smoothing index of the family based group of company was 122.03, while professionally managed group of companies had an income smoothing index rank average of 114.41.

*Table 4 :* Results of the Kruskal-Wallis Test

| Factors | N | Rank Average | Chi-Square | p |
|---|---|---|---|---|
| Large Size | 20 | 73.33 | 17.421 | .000 |
| Medium Size | 25 | 84.02 | | |
| Small Size | 185 | 124.31 | | |

The hypothesis of the Table 4 deals with the problem: Is there a significant difference between the income smoothing index of companies in the three groups of companies' falling under the category of large, medium and small. In order to resolve this problem, the income smoothing indexes of the three groups of companies have been compared using Kruskal-Wallis Test, a non-parametric statistical technique.

An analysis of the results in Table 4 shows that the Income Smoothing index of the companies in the three groups revealed a highly significant statistical difference at the level of p<.000 (p=.000<.05). The rank averages of the income smoothing index of the large sized and medium sized companies were 73.33 and 84.02 respectively, while the small sized companies had an income smoothing index rank average of 124. 31. The analysis of the rank averages reveals that the small sized companies had higher income smoothing index than those in the public sector group. This result indicates that the small sized companies have higher incidence of income smoothing as compared to large sized and medium sized companies.

*Logistic Regression Model:* The binary logistic regression model is used to analyze the income smoothing of companies. The analysis is done on the basis of independent variables viz size, nationality, sector, management where income smoothing status has been assumed to be dependent variable .This paper deals with presentation and analysis of Income smoothing status of the companies. It is assumed that Income smoothing status of the companies is affected by the parameters viz. (i) size (large, medium and small), (ii) Nationality (MNC and India) (iii) Sector (Public and Private) (iv) Sector (Service and Manufacturing) and (v) Management (Family based and Professional Management). The logistic regression approach has been adopted to study the Income smoothing status under the variables mentioned above. Income smoothing status is partitioned into two sets viz. Smoothers and Non Smoothers. Both univariate and multiple regression models have been used. In case of univariate binary logistic regression model, it is assumed that the income smoothing status is affected only by one variable but in case of multiple binary regression model, it is assumed that the income smoothing status is affected by various factors under study.

Table 5 : Results of Univariate Binary Logistic Regression Model for the Factor Size

| | | Wald Statistic | Sig. | Odds Ratio |
|---|---|---|---|---|
| Step 1(a) | Size | 9.794 | 0.007 | |
| | Size(Medium) | 1.603 | 0.205 | 2.173 |
| | Size(Small) | 8.732 | 0.003 | 4.161 |
| | Constant | 0.199 | 0.655 | 0.818 |

From the above Table 5, it can be seen that size as a whole is a significant factor with p value (.007) less than .05.The odds ratio reveals that the smoothing is approximately 3 times higher in case of medium sized companies and approximately 4 times higher in case of small sized companies.

Table 6 : Results of Univariate Binary Logistic Regression Model for the Factor Nationality

| | | Wald Statistic | Sig. | Odds Ratio |
|---|---|---|---|---|
| Step 1(a) | Nationality(Indian) | 2.438 | 0.118 | 2.464 |
| | Constant | 0.077 | 0.782 | 1.167 |

From the above Table 6, it can be seen that the smoothing is approximately 3 times higher in case of Indian companies as compared to multinational companies which is proved by the odds ratio. But this factor nationality is not significant as far as smoothing of income is concerned as the p value (.118) is higher than.05.

Table 7 : Results of Univariate Binary Logistic Regression Model for the Factor Sector (Private and Public)

| | | Wald Statistic | Sig. | Odds Ratio |
|---|---|---|---|---|
| Step 1(a) | Sector(Private) | 1.534 | 0.216 | 2.797 |
| | Constant | 0 | 1 | 1 |

From the above Table 7, it can be seen that the incidence of smoothing is more in case private sector companies' i.e 3 times higher than the public sector companies but this factor should not be considered as a significant factor affecting the smoothing of income as the p value (.216) is higher than .05.

Table 8 : Results of Univariate Binary Logistic Regression Model for the Factor Sector (Service and Manufacturing)

| | | Wald Statistic | Sig. | Odds Ratio |
|---|---|---|---|---|
| Step 1(a) | Sector(Manufacturing) | 0.016 | 0.898 | 1.062 |
| | Constant | 39.291 | 0 | 2.691 |

The Table 8 above shows that the manufacturing sector companies are more inclined towards income smoothing as the odds ratio here is about 2 times higher than the service sector companies but this factor is not a significant factor affecting income smoothing as the p value (.898) is very much higher than .05.

Table 9 : Results of Univariate Binary Logistic Regression Model for the Factor Management

| | | Wald Statistic | Sig. | Odds Ratio |
|---|---|---|---|---|
| Step 1(a) | Management(Professional) | 0.144 | 0.704 | 1.18 |
| | Constant | 37.176 | 0 | 2.648 |

From the above Table 9, it can be seen that the incidence of smoothing is slightly higher in case of professionally managed companies as compared to family managed companies as revealed by the odds ratio. But this factor is not at all significant factor affecting income smoothing as the p value (.704) here is much higher than .05.

Table 10 : Results of Multiple Binary Logistic Regression Model

|  |  | Wald Statistic | Sig. | Odds Ratio |
|---|---|---|---|---|
| Step 1(a) | Size | 7.325 | 0.026 |  |
|  | Size(Medium) | 1.827 | 0.177 | 2.672 |
|  | Size(Small) | 6.344 | 0.012 | 5.045 |
|  | Nationality(Indian) | 0.38 | 0.537 | 1.491 |
|  | Sector(Private) |  |  |  |
|  |  | 0.158 | 0.691 | 0.661 |
|  | Sector(Manufacturing) |  |  |  |
|  |  | 0.039 | 0.843 | 0.91 |
|  | Management(Professional) | 0.838 | 0.36 | 1.583 |
|  | Constant | 0.147 | 0.701 | 0.671 |

The Wald statistic and the corresponding significance level test in the model are shown in the above Table 10. If the Wald statistic is significant (i.e., less than 0.05) then the parameter is significant in the model. Of the independent variables, nationality, sector (private or public), sector (manufacturing or service), management are insignificant, whereas size of the companies have significantly affected the smoothing of the companies.

*Overall Research Findings:* This research study has been done with the objective of investigating regarding the presence of income smoothing in Indian listed companies and also   to see the factors affecting the income smoothing activity .The study has been undertaken with 6 hypotheses to be tested for its validity.

### $H_{01}$:  Smoothing practice is not prevalent among the listed companies in India.

The first hypothesis of the study deals with the question of whether income smoothing is prevalent among the listed companies in India. However, from the descriptive statistics, it has been found that 168 (73%) companies are involved in income smoothing activity whereas only 62 (27%) companies are proved to be non smoothers. Many previous studies proved the presence of income smoothing among the companies. But for this paper, the study undertaken by Khairul Anuar Bin Kamarudin et al among the companies listed in the Kuala Lumpur Stock Exchange has been used as benchmark for comparison. The findings of the study showed that the number of smoothing firms was smaller compared to non-smoothing firms where 81(71%) firms are classified as non-smoother and 33(29%) firms as smoother. These findings on the presence of income smoothing practices in Malaysia are consistent with Ashari et. al (1994) findings. The study concluded that smoothing is present among the companies but at a lower level. Since the percentage of smoother companies in the present study has been very high as compared to the study undertaken by Khairul Anuar Bin

Kamarudin et al among the companies listed in the Kuala Lumpur Stock Exchange, it can be concluded that smoothing is prevalent among the listed companies in India and at a high level. Therefore, the null hypothesis can be rejected.

### $H_{02}$:  Extent and direction of smoothing do not depend on size of company.

The second hypothesis deals with the question of whether income smoothing is associated with   size of the company. Previous studies found that company size had an effect on income smoothing practices. However, the findings are inconsistent on this matter. It has been suggested by Moses (1987) that larger firms may have greater incentive to smooth income rather than smaller firms. Ronen and Sadan (1981) posited that this is because larger firms are subject to greater scrutiny from the government as well as the public. On the other hand, Albrecht and Richardson (1990) argued that since larger firms receive more analyst scrutiny, they may have a lower tendency to smooth income. However, a study conducted by Ashari *et. al* (1994), has failed to detect any significant association between the smoothing practices and the size of company . More recent findings by Michelson, Jordan-Wagner and Wootton (2000) found that smoother firms are larger in size than non smoothing firms. In this study, to test the above hypothesis, the Chi-Square Test, Kruskal-Wallis Test and Binary Logistic Regression Model has been performed to investigate any significant systematic differences between companies that smooth their income and companies  that do not. Result is very much clear and can be said that the size significantly affect the smoothing of the companies .From the multiple binary logistic regression model, it can be said that the small sized companies are more significant in affecting the smoothing of the companies. Therefore the null hypothesis can be rejected and the alternate hypothesis can be accepted.

*$H_{03}$ :* Income smoothing is independent of nationality of the company.

The third hypothesis deals with the question of whether income smoothing is associated with nationality of the company. Ashari *et. al* (1994) found that income smoothing is associated with the nationality of the companies. The present study did not find any significant association between the income smoothing and nationality of the companies and therefore the null hypothesis can be accepted.

*$H_{04}$ :* Income smoothing is independent of private and public sector.

The fourth hypothesis of the study deals with the question of whether income smoothing is associated with sector (public and private). The result of the study has not been very clear as it differs in case of various statistical tools used in the study. In case of Chi-Square Test, it has been found that there is no significant association between the income smoothing and sector (public and private) with the (p=.197>.05). Similar result has been found in case of Binary Logistic Regression Model. But the result differs in case of Mann-Whitney test. As per this test, there is a significant association between the income smoothing and sector (public and private) with the (p=.043<.05).However, this difference is due to the fact that in case of Mann-Whitney test, income smoothing index has been used as a dependent variable as against the status of the companies (smothers and non smoothers) applied in case of Chi-Square Test and Binary Logistic Regression Model.

*$H_{05}$ :* Income smoothing is independent of manufacturing and service sector.

The fifth hypothesis of the study deals with the question of whether income smoothing is associated with sector (service and manufacturing).Several studies have also looked at possible determinant of income smoothing as industrial sector. Ronen and Sadan (1981) concluded that companies in different industries smoothed their income in varying degrees. In particular, a high degree of smoothing was found in the oil and gas, and drug industries, both of which were very much under public scrutiny. Belkaoui and Picur (1984) also reached a similar conclusion. They found that companies in peripheral industrial sectors showed a greater incidence of income smoothing behaviour than companies in the core industrial sectors. This study has concluded that there is no significant association between the sector (service and manufacturing) and income smoothing and therefore the null hypothesis can be accepted.

*$H_{06}$ :* Income smoothing is independent of family based and professionally managed companies

The last hypothesis of the study deals with the question of whether income smoothing is associated with management. Smith (1976) and Kamin and Ronen (1978) pointed out that, compared to owner-controlled companies, the manager-controlled ones tended to smooth income significantly more frequently. However the present study has not found any significant association between the income smoothing and management of the company and therefore the null hypothesis can be accepted.

*Epilogue:* The study was undertaken with a broad objective of determining the presence of income-smoothing practice among the sample companies. The result of the study gives an idea regarding the presence of income smoothing practice among majority of sample companies. In the present study, five factors have been selected to determine their association with income smoothing practices. The factors selected for the study are size (large, medium and small), Nationality (MNC and India), Sector (Public and Private), (Sector (Service and Manufacturing) and Management (Family based and Professional Management). The purpose of the study has been fulfilled as income smoothing practice has been found in the sample companies and association has also been found in between income smoothing practice and size of the company (large, medium and small). Income smoothing is a highly unethical practice which has been found to be exercised by majority of the corporate houses. The accounting system recognized in India and abroad has not allowed such practice while finalizing financial statements of a business enterprise. But in spite of that some business houses are inclining to adopt income smoothing practices to a certain degree. It is observed that a very small degree of income smoothing may not be harmful for investors and at the same time the image of the enterprise keeps in high position. But, high degree of income smoothing is betrayal to the investors and the customers.

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