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INCOME SMOOTHING IN INDIA- AN EMPIRICAL STUDY OF BSE 200 INDEX COMPANIES

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ABSTRACT

The objective of the study is to determine the existence of Income smoothing behaviour amongst the BSE 200 index companies in India. The paper applies the coefficient of variation method to 127 companies listed on Bombay stock exchange over the period of 10 years from 2002-2012 to identify the income smoothing behaviour amongst the firms. The results show that around 60% of the companies smooth their income. The other objective is to analyse the factors affecting the income smoothing behaviour like the company size, profitability, degree of debt and dividend rate. Using t-test and the logistic regression, it was found that there are other factors that influence the income smoothing behaviour among the sample under study.

Keywords: Earnings Management, Income smoothing, logistic regression

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INTRODUCTION

Recently earnings management has for a considerable number of years been an interesting issue within financial reporting research. Earnings management is the process of taking deliberate steps within the constraints of generally Accepted Accounting Principles (GAAP) to bring about a desired level of reported earnings. According to different intentions of management- it could result in increasing, decreasing or smoothing reported income.

Income smoothing, or deliberate voluntary acts by management to reduce income variation by using certain accounting devices, has been a topic of interest in the accounting and finance literature for some time. It is mainly a reduction of the variance of the profit.

Objectives of the Study

The core objective of the study is to identify the income smoothing behaviour in India. The additional objectives are as follows:

    i.   To understand the concept of income smoothing along with its various dimensions.

ii. To measure the occurrence of income smoothing on operating income, ordinary income, net income and adjusted earnings per share.

iii. To identify whether the income smoothing behaviour occurs in Indian companies listed on Bombay Stock exchange specifically the BSE 200 companies.

iv. To identify empirically the relationship between Income smoothing and company profitability in BSE 200 index companies.

v. To determine the influence of the four factors viz profitability, the degree of debt, the level of dividend payout and the size of the firm on the income smoothing behaviour of a firm.

Need of the study

There has been considerable research upon earnings management in the academic field. Income smoothing is also one of the approaches in which managers make an attempt to stabilise the volatility in earnings. In India, earnings management and related issues like Income smoothing as far as the existing literature is concerned, have not been researched upon much. This paper focuses on the income smoothing behaviour of the BSE 200 index companies and further to determine the impact of the factors on the income smoothing behaviour of the companies under study.

Limitations of the study

The paper suffers from the following limitations:

1. The study is done on a sample of 127 Indian companies out of the BSE 200 companies for a period of ten years. The study on a larger sample or some other indices can affect the results.

2. Various companies have been excluded from the index as the required data is not available in the CMIE's Prowess database.

3. Lack of previous studies on income smoothing in Indian context is also an important limitation of the paper.

4. The data constitutes various companies big or small. However, full effort has been made to make the data normal by eliminating outliers.

5. The study may suffer from the inherent limitations of the application of the logistics regression.

Literature Review

- ***Principal definitions of income smoothing***

The supposition that firms may intentionally smooth income was first suggested by Hepworth [1953] and developed by Gordon [1964] with a series of propositions:

Proposition 1: the criterion a corporate management uses in selecting among accounting principles is the maximization of its utility or welfare.

Proposition 2: the utility of a manager increases with (1) its job security, (2) the rate of growth in his income, and (3) the rate of growth in the firm's size.

Proposition 3: the achievement of the management goals stated in proposition 2 is dependent in part on the satisfaction of stockholders with the firm's performance.

Proposition 4: Stockholders satisfaction with a firm increasing the rate of growth of income (or the average rate of return on equity) and the stability of the income is essential for managers to be free to pursue their own objectives.

The principal definitions as proposed by various authors are as follows:

Smoothing moderates year-to-year fluctuations in income by shifting earnings from peak years to less successful periods. (Copeland 1968). Beidleman (1973) is of the view that Smoothing of reported earnings may be defined as the intentional dampening of fluctuations about some level of earnings that is currently considered to be normal for a firm. By smoothing, we mean the dampening of the variations in income over time (Ronen and Sadan 1975). Income Smoothing is a special case of inadequate financial statement disclosure. The smoothing of income implies some deliberate effort to disclose the financial information in such a way as to convey an artificially reduced variability of the income stream (Imhoff 1981). Another

definition by Givoly and Ronen (1981) viewed Smoothing as a form of signalling whereby managers use their discretion over the choice among accounting alternatives within generally accepted accounting principles so as to minimize fluctuations of earnings over time around the trend they believe best reflects their view of investors' expectations of the company's future performance.

Income Smoothing is the process of manipulating the time profile of earnings or earnings reports to make the reported income stream less variable, while not increasing reported earnings over the long run (Fudenberg and Tirole,1995)

Types of smoothing
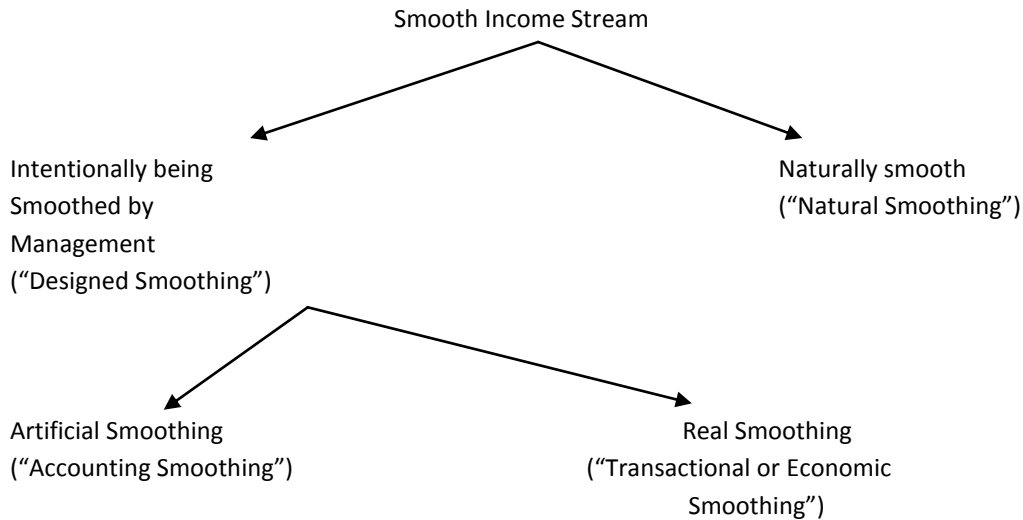
Source: Eckel 1981 p.29

- *Motivations for Smoothing*

Hepworth (1953) has thrust upon tax advantages and improved relations with the creditors, employees and investors as the motivations for income smoothing. However, Fern, Brown and Dickey (1994) have taken out the following to be the examples of motivations for smoothing:

- o To affect a firm's stock prices and risk.
- o To manipulate management compensation
- o To escape restrictive debt covenant
- o To avoid political costs

Bhat 1996 in his paper "Bank and income smoothing: An empirical analysis" has also added to the literature of motivations for smoothing in the following manner. He says that Income smoothing improves investors' perceptions of the risk of the firm. It helps to maintain a steady compensation scheme over time for managers. Since it is hard for investors to gauge the quality of the management of a bank, IS provides as excellent alternative for low quality management to project an image of high quality management. IS improves price stability of a stock by reducing its perceived earnings volatility.

There are a number of reasons for smoothing the income, a lot of researchers have commented upon it along with the ones mentioned above. For example, smoothing income should have a favourable effect on share value and cost of capital (Beidleman, 1973), or stockholders will obtain more information from earnings announcements (Easton and Zmijewski, 1989).

- *Smoothing objects*

The smoothing objects are the numbers whose series is presumed to be the target of the smoothing attempts. They represent the variables whose variations over time are to be dampened (Kamin and Ronen, 1978)

Few empirical studies dealing with income smoothing show that the concept of "income" has been interpreted in different ways.

Table 1 THE SMOOTHING OBJECTS

Authors	Objects of smoothing
Dopuch and Drake [1966]	Net income
Gordon, Horwitz and Meyers [1966]	- Earnings per share
	- Rate of return on stockholder's equity
Archibald [1967]	Net income
Gagnon [1967]	Earnings (less preferred dividends)
Copeland [1968]	Net income
Cushing [1969]	Earnings per share (unclear which type))
White [1970, 1972]	Earnings per share (unclear which type)
Dascher and Malcolm [1970]	Income (not clear which one)
Barefield and Comiskey [1972]	Before tax earnings (unclear which one)
Beidleman [1973, 1975]	Earnings (unclear which one)
Ronen et Sadan [1975a, 1975b]	- Ordinary income per share before extraordinary items
	- Extraordinary income per share
Barnea, Ronen and Sadan [1976, 1977]	- Ordinary income (before extraordinary items) per share
	- Operating income per share (before period charges and extraordinary items)
Kamin and Ronen [1978]	- Operating income
	- Ordinary income
Givoly and Ronen [1981]	Earnings per share (before extraordinary items), adjusted for stock splits and dividends.
Imhoff [1981]	- Fully diluted Earnings per share
	- Net income
	- Net income before extraordinary items
	- Operating income
	- Gross margin
Koch [1981]	Earnings per share
Amihud, Kamin and Ronen [1983]	Net operating income per share
Belkaoui and Picur [1984]	- Operating income
	- Ordinary income
Moses [1987]	Earnings (unclear which)
Brayshaw and Eldin [1989]	- Ordinary income before tax and Extraordinary items
	- Net income
Craig and Walsh [1989]	Reported consolidated net income after tax, Minority interests and extraordinary items
Albrecht and Richardson [1990]	- Operating income
	- Income from operations
	- Income before extraordinary items
	- Net income
Ashari, Koh, Tan and Wong [1994]	- Income from operations
	- Income before extraordinary items
	- Net income after tax
Beattie *et al.* [1994]	Reported profit after tax, but before Extraordinary items
Fern, Brown and Dickey [1994]	Ordinary income (income before Extraordinary items)

Sheikholeslami [1994]	- Pre-tax income
	- Net income
	- Operating income
Michelson, Jordan-Wagner and Wooton [1995]	- Operating income after depreciation
	- Pre-tax income
	- Income before extraordinary items
	- Net income
Bhat [1996]	Earnings after taxes and before extraordinary items
Saudagaran and Sepe [1996]	Earnings (unclear which)
Breton and Chenail [1997]	Net income
Godfrey and Jones [1999]	Net operating profit

Source: Stolowy, Herve and Breton, Gaetan(2000), A framework for the classification of Accounts manipulations

- ***Research Methodologies***

Copeland (1968) suggests three general methods for identifying income smoothing behaviour: 1) directly ascertain from management by interview, questionnaire, or observation; 2) contact second parties such as CPA's, or 3) examination of financial statements and/or reports to governmental agencies to verify, *ex post*, if smoothing has occurred.

Eckel [1981] noticed that by far the great majority of researchers selected the last method assuming the same conceptual framework: if the variability of normalized earnings generated by a specified expectancy model is lessened by the inclusion of a potential smoothing variable utilized by the firm, then the firm has "smoothed income". This is confirmed by Albrecht and Richardson [1990] who indicated that early empirical researchers in accounting examined *ex post* data to determine the existence of smoothing behavior. The general assumption was that if smoothed earnings resulted from the choice of a smoothing variable, then IS behavior must have occurred. A classical approach to studying IS involves an examination of the relation between choice of smoothing variable and its effect on reported income.

Ronen, Sadan & Snow [1977] suggested an interesting approach to research on IS. According to them, any researcher who wants to test for smoothing must simulate management's decision-making process. Specifically, they address four methodological questions the researcher has to cope with:

1. What is management's object of smoothing?
2. Through what dimension management is conducting smoothing?
3. What is management's smoothing instrument?
4. What is the object of the smoothing behavior?

With regard to the earnings trend, Imhoff [1981] explained that the model used to assess the smoothness or the variance of the income varies through time.

Researches using a two-periods model assume the target earnings number as equal to the previous year's earnings [Copeland and Licastro, 1968]. In other words, the measure of smoothness is the magnitude of the change in income from one year to the next. The studies which evaluated earnings using multi-period tests were based on the assumption that there should be a smooth increasing trend [Gordon, Horwitz and Myers, 1966]. They have employed exponential models [Dascher and Malcolm, 1970], linear time-series models [Barefield and Comiskey, 1972], semilogarithmic time trend [Beidleman, 1973] and firstdifference market income index models [Ronen and Sadan, 1975], to mention a few. Dopuch and Watts [1972] suggested that the Box and Jenkins techniques might be useful in ascertaining which smoothing model to use.

Imhoff [1977], followed by Eckel [1981], developed a methodology based on the testing of the variability of income against the variability of sales. They assumed that the level of income is dependent to some extent on the level of sales. The basic idea is that a change in sales, at the margin, must create a relatively larger effect on the profit. Therefore, if the variance of the profit is less than the variance of the sales, we may conclude that the benefit had been smoothed.

Gonedes [1972] considered the IS hypothesis within the context of two kinds of stochastic processes: martingales and mean-reverting processes. A characterization of optimal smoothing action for an N period horizon was derived via dynamic programming tools. The smoothing object was formed by a series of rates of return: the rate of return on common equity, the rate of return on total assets, etc.

To summarise, the literature seems to provide strong evidence that income smoothing is practised among companies in varying degrees. Also, given management discretion and control over the occurrence and recognition of certain events, allocation of revenues and expenses over time, and classification of income items, many possibilities for and methods of income smoothing exist. Finally, previous studies seem to suggest that the degree of income smoothing is associated with factors such as company size and industrial sector.

It can also be noted from the literature that previous studies have been conducted primarily in developed countries such as the US and the UK. In this respect, it is hoped that a study in an Asian country like India can contribute to the existing literature.

HYPOTHESIS DEVELOPMENT

The objective of this paper is to determine the influence of certain empirically tested factors on income smoothing in India.

Company size: Previous studies found that company size had an effect on income smoothing behaviour. Moses (1987) reported association of the income smoothing practice with the company size. Watts and Zimmerman (1987) argued that the larger firms are more politically sensitive than small firms and therefore, face the incentive to adopt accounting procedures that defer reported earnings. Michelson, Jordan-Wager and Wotton (2000) test whether the stock market response to accounting performance measures is related to the smoothness of reported earnings. They find that companies that report smoother incomes have significantly higher cumulative average abnormal returns than firms that do not. And smoothing firms typically are larger in size than non-smoothing firms. In this study, the company size is measured by sales of the firm. Thus the null hypothesis tested in the study is as follows:

H1: There is no statistical difference in the mean size of the company between smoothing and non smoothing firms.

Profitability: Archibald (1967) concluded that a high proportion of companies smoothed their income when their profitability was relatively low. Also, White (1970) provided evidence that companies with declining profitability tended to smooth their income. Presumably, fluctuations in income streams have a more severe impact on low profitability companies: hence they have a stronger motivation to smooth income. Given these findings, it is hypothesized that companies with lower profitability tend to smooth their income more than companies with higher profitability. In this study, the profitability is measured by return on networth of the firm. Thus the null hypothesis tested in the study is as follows:

H2: There is no statistical difference in the mean profitability between income smoothing and non-smoothing firms.

Debt: While there is some agreement that one purpose of smoothing reported income is to avoid violation of debt covenants and to decrease cost of debt, Carlson and Bathala (1997) propose that the firms with higher debt have more incentive to smooth reported income. In this study, the degree of debt is measured by debt equity ratio of the firm. Thus the null hypothesis tested in the study is as follows:

H3: There is no statistical difference in the degree of debt between income smoothing and non-smoothing companies.

Dividend rate: Gordon concludes that a manager should smooth reported income within the GAAP to increase stockholders satisfaction, because a smoother level of income permits a higher dividend rate and therefore higher stock prices. Biedleman (1973) proposes that smoothing income should have a favourable effect on market value of shares. In this study, the dividend rate is measured by dividend payout ratio of the firm. Thus the null hypothesis tested in the study is as follows:

H4: There is no statistical difference between the dividend rate paid out between income smoothing and non-smoothing firms.

SMOOTHING OBJECTS

Table no 1 illustrates the various smoothing objectives as per the existing literature. However, the present study aims to measure the occurrence of smoothing on:

❖ Operating income OPI [Ashari et.al,1994]- taken as operating profit.

❖ Ordinary income ODI [Ronen and Sadan,1975] – taken as Income before extraordinary items.

❖ Net income NI [Gordon, Horwitz and Meyers,1966]- taken as net income.

❖ Adjusted earnings per share ADEPS[White,1970]- taken as adjusted earnings per share (annual)

RESEARCH METHODOLOGY

Sample: 127 companies out of BSE 200 index companies as the data was not available for all of the variables for all companies

Time period of the study: Ten years starting from April 1, 2002 to March 31, 2012 has been taken.

Data collection: The secondary data regarding the variables for the study like sales, return on net worth, dividend payout ratio, debt-equity, operating profit, ordinary income, net income and adjusted earnings per share is collected from the CMIE's Prowess database.

Market Proxy used

The BSE 200 index companies are used as a sample for the present study through judgemental sampling. The BSE 200 index was launched in 1994. The financial year 1989-90 was chosen as the base year because of the price stability exhibited during that year and due to its proximity to the current period. The BSE 200 companies have been taken from the website of Bombay stock exchange in February, 2009.

Table showing the distribution of the BSE 200 stock index into different industries
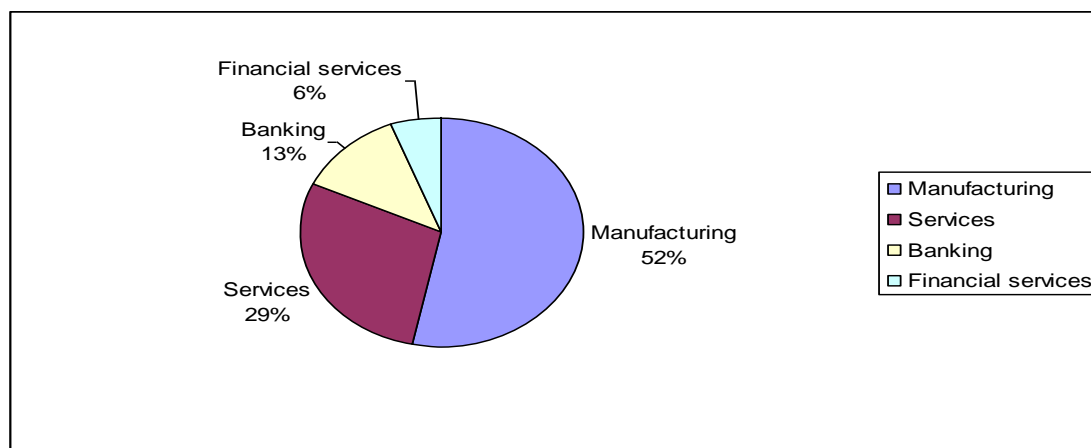
MEASUREMENT OF VARIABLES

Given the four null hypothesis stated above, the independent variables for the study are total sales, return on net worth, dividend payout ratio and debt equity ratio.

The dependent variable for the study is income smoothing, as measured by an index. For this purpose, Eckel's (1981) operationalisation of income smoothing is used.

The income smoothing index is used in the study is objective and statistically based, with a clear cut-off between smoothers and non-smoothers. Essentially, Eckel's approach compares income variability with sales variability to control for the effects of real smoothing (due to actual economic transactions/events) and naturally (inherently) smooth income streams. In particular, the measurement method relies on the analysis of income and sales variability as follows:

$$\text{Income smoothing Index} = (CV_I / CV_S)$$

Where

I= one period change in income

S= one period change in sales

CV_J = coefficient of variation for variable j (i.e. j's standard deviation divided by its expected value)

Income smoothing is indicated by an index of less than 1. Eckel's index is developed specifically as a dichotomous measurement of income smoothing. Therefore, for the purpose of this study, the sample

companies are classified as smoothers or non smoothers, depending on whether the income smoothing index is less than or more than 1 respectively.

EMPIRICAL TESTS AND RESULTS

- **Identification of smoother and non smoother firms**

We use the income smoothing index of four income measures to identify the sample firms as smoothers or non smoothers. The index has been calculated for the 127 sample companies based on ten years data to provide an adequate time series data to realistically identify firms that have been smoothing over a number of years.

Table 2 Quantity and percentage of smoothing firms

	OPI	ODI	NI	ADEPS
Quantity(percentage) of smoothing firms	103 (81)	77(61)	51(40)	93 (73)
Quantity(percentage) of non-smoothing firms	24 (19)	50 (39)	76 (60)	34 (27)
Total	127 (100)	127 (100)	127 (100)	127 (100)

On the basis of the information presented in table 2, the percentage of companies smoothing their income is 81% using operating income, 61% using ordinary income, 40% using net income and 73% using adjusted Earnings per share. As can be seen, when income from operations is examined as an income smoothing objective, there are 103 smoothers and 24 non-smoothers. The corresponding numbers for ordinary income as an income smoothing objective are 77 and 50 respectively. When net income is taken as an income smoothing objective, there are 51 smoothers and 76 non smoother firms. Finally, there are 93 smoothers and 34 non-smoothers when adjusted EPS is considered as an income smoothing objective. These results indicate the existence of income smoothing practices among companies listed on the Bombay Stock Exchange.

- **Descriptive Statistics**

Descriptive statistics for return on net worth, sales, debt equity ratio and dividend payout ratio are also reported in the table 3 for all sample companies. Before calculating the descriptive statistics and exposing the data to further statistical analysis, the data has been made normal after taking care of the outliers by using square-root transformation. Due to this the data, the number of companies left for analysis are 117, resulting into a response rate of 58.5%. Based on the prior studies, this response rate is acceptable for the present study.   To assess whether these independent variables differ significantly across smoothers and non-smoothers, t-tests of differences are performed on return on net worth, sales, debt equity ratio and dividend payout ratio.

Table 3 Descriptive Statistics for the proxy variables

	Mean	Minimum	Maximum	Std. deviation
ROE	4.24	2.26	7.14	0.93
DER	0.78	0.00	1.81	0.40
DIVIR	5.27	2.09	9.51	1.64
SALES	51.46	6.66	123.86	26.50

The above table depicts the descriptive statistics for the proxy variables. The mean (standard deviation) for the return on equity which is a proxy variable for profitibilty of the firms is 4.24 times (0.93). The values of the mean, minimum, maximum and the standard deviation are low as they are square-root transformed to make the data normal. The mean firm size which depends upon the sales variable is Rs.51.46 lac for the firms under study.

Table 4 Summary of t-tests

	ROE	DER	DIVIR	SALES
	t-value and significant value of variables			
OPI	-0.236	-1.668	-0.621	1.816
	(0.814)	(0.098)	(0.536)	(0.072)
ODI	-0.083	-0.472	1.720	-0.306
	(0.934)	(0.638)	(0.088)	(0.760)
NI	0.962	-1.144	-0.444	0.622
	(0.338)	(0.255)	(0.658)	(0.535)
ADEPS	0.676	-1.674	-0.077	0.610
	(0.501)	(0.097)	(0.938)	(0.543)

a) The values in parentheses are the significance value.

b) Significance values at 0.05 level

Table no. 4 summarises the univariate analysis using t-test of the sample. In order to determine if there is a statistical difference in mean dependent (proxy) variables between the smoothing and non-smoothing firms, I have employed the difference of means test, t-test assuming equal variance. The above table indicates that the significance level at 0.05 in all the cases is greater than 0.05 indicating that there is no statistical difference in the mean dependent (proxy) variables between smoothing and non-smoothing firms.

The results of the t-test are acceptance of the null hypothesis formed in the present study. There is no difference in the means of company size, profitability, dividend payout and degree of debt in the income smoothing and non-income smoothing firms.

Before applying the logistic regression model, multicollinearity is to be confirmed. There are a several measures for multicollinearity in the literature, such as variance-inflation factors (VIF) or condition index. In the study, VIF method is applied to check multicollinearity. The VIF for the independent variable is presented below:

Table 5 VIF of independent variables

	ROE	DER	DIVIR	Sales
VIF	1	1	1.002	1.005

According to table 5, the VIF of each variable is less than 5 (the minimum standard value for multicollinearity); there is no serious multicollinearity problem persisting in the data. The results show that the study can be proceeded to logistics regression model without tackling the multicollinearity problem.

- **Logistics regression Analysis**

The logistic regression model is used in the paper a the dependent variables are categorical dichotomy, that is, the dependent variable is either 0 for non-income smoothing firms or 1 for income smoothing firms. In order to discuss the potential relationship between each dependent variable and the aggregate effect of the independent variables on smoothing behaviour, a logistic regression model is constructed.

$$\text{Dependent variable}_{IS,NS} = \alpha + \beta_1 ROE + \beta_2 DER + \beta_3 DIVIR + \beta_4 SALES + \varepsilon_i$$

Where Dependent variable$_{IS,NS}$ = 0 if a company is a non-income smoother or 1

If a company is a income smoother

α = the constant

$\beta_1, \beta_2, \beta_3, \beta_4$ = regression coefficients

ROE= proxy variable for profitability

DER= proxy variable for the degree of debt

DIVIR= proxy variable for dividend rate

SALES= proxy variable for company size

ε_i = the residual value

The SPSS 15.0 version is used for the logistics regression analysis using Forward Stepwise: Likelihood Ratio. The following tables were generated during the analysis. The tables summarize the roles of the parameters in the model. B is the estimated coefficient, with standard error S.E. The ratio of B to S.E., squared, equals the Wald statistic. If the Wald statistic is significant (i.e., less than 0.05) then the parameter is useful to the model. Exp (B) is the predicted change in odds for a unit increase in the predictor. When Exp (B) is less than 1, increasing values of the variable correspond to decreasing odds of the event's occurrence. When Exp (B) is greater than 1, increasing values of the variable correspond to increasing odds of the event's occurrence.

Table 6 Logistics Regression results using operating income as a dependent variable

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
							Lower	Upper
DER	1.283	.595	4.647	1	.031	3.607	1.124	11.577
Constant	-2.504	.592	17.882	1	.000	.082		

The above table shows that Debt equity ratio is the variable out of the proxy variables that significantly predict the income smoothing and non-income smoothing behaviour of the firms. The value of the constant is -2.504 with a standard error of 0.59. The Exp (B) is 3.607 for the proxy variable debt equity ratio. The other three predictor variables do not significantly affect the outcome. The wald statistic is significant for the model.

Table 7 Logistics Regression results using ordinary income as a dependent variable

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.398	.189	4.462	1	.035	.671

Table 8 Logistics Regression results using net income as a dependent variable

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.434	.189	5.259	1	.022	1.543

The above tables no 7 & 8 show that if the firms use ordinary income or net income as an income measure to smooth the income, then it is found from the results that there is no predictor variable which is significantly affecting the outcome variable.

Table 9 Logistics Regression results using Adjusted earnings per share as a dependent variable

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
							Lower	Upper
DER	1.104	.532	4.299	1	.038	3.016	1.062	8.561
Constant	-1.896	.508	13.923	1	.000	.150		

Using Adjusted earnings per share as an income measure, the wald statistic signifies that the model is fit for the data. This income measure also reinforces that the debt equity ratio is one of the variable that significantly affect the income smoothing behaviour of the firms with exp (B) equal to 3.016.

The above logistic regression analysis shows the results consistent with the results of t-test. However, it can be seen from the table 4 that the significance value is close to 0.05 in case of Debt equity ratio when the operating income and adjusted earnings per share are used as income smoothing measures.

It is evident from the above analysis that the factors as hypothesised in the present study are not affecting the income smoothing and non-income smoothing behaviour. Based on prior research, there can be other factors influencing the income smoothing behaviour of the firms in India.

Concluding remarks

Income smoothing is used to deter the variance in profits. The present study presents the concept of income smoothing and its dimensions. It was analysed in the study that there are a number of operators for smoothing available with the firm. 81% of the firms in sample smooth income using operating income as a smoother object. However, only 40% of the sample Indian firms smooth income through net income as an income measure. The results of the study show that there exists an income smoothing behaviour amongst the Indian

companies listed on Bombay Stock Exchange especially the BSE 200 index companies. A number of hypothesises were made in the study about the factors affecting the income smoothing behaviour of the firm in India.

It can be concluded from the study that there exists income smoothing practice among the Indian companies listed on Bombay Stock Exchange specifically BSE 200 index companies which were a sample to the present study. The factors affecting the income smoothing behaviour like company size, profitability, dividend rate and the degree of debt does not hold good in the study. The reason for this can be that the number of companies used as sample in the study is quite less as compared to the companies in India. The study may provide better results if the sample is increased.

Directions for future research

The study is by no means complete or comprehensive; potential avenues exist for future research. The future researchers may study the other factors that motivate managers to smooth income or study the use by managers of various income smoothing objectives and instruments. Following the limitations highlighted earlier, future research can also conducted on a larger sample or different stock exchanges or different time periods.

ANNEXURE

Income smoothing Index = (CV_I/CV_S)

Where

I= one period change in income

S= one period change in sales

CV_J = coefficient of variation for variable j (i.e. j's standard deviation divided by its expected value)

Table showing the income smoothing index for the 127 BSE 200 index companies

		Operating income	Ordinary income	Net income	Adjusted EPS
1	A B B Ltd	0	1	1	0
2	A C C Ltd.	1	0	1	0
3	Aban Offshore Ltd.	0	1	1	0
4	Adani Enterprises Ltd.	0	1	1	1
5	Aditya Birla Nuvo Ltd.	0	0	0	1
6	Allahabad Bank	0	0	1	0
7	Ambuja Cements Ltd.	0	0	1	1
8	Apollo Hospitals Enterprise Ltd.	0	0	0	0
9	Areva T & D India Ltd.	0	0	0	0
10	Ashok Leyland Ltd.	0	0	0	1
11	Asian Paints Ltd.	0	0	0	0
12	Axis Bank Ltd.	1	1	1	1
13	B E M L Ltd.	0	0	0	0
14	Bajaj Holdings & Invst. Ltd.	0	1	1	0
15	Bank Of Baroda	0	0	1	0
16	Bank Of India	0	1	1	0
17	Bharat Electronics Ltd.	0	0	0	1
18	Bharat Forge Ltd.	0	0	0	0
19	Bharat Heavy Electricals Ltd.	0	1	1	0
20	Bharat Petroleum Corpn. Ltd.	0	1	1	1
21	Bhushan Steel Ltd.	0	0	0	0
22	Bombay Dyeing & Mfg. Co. Ltd.	1	1	1	1
23	Bosch Ltd.	0	0	0	0
24	C E S C Ltd.	0	1	1	0
25	Castrol India Ltd.	0	1	1	0
26	Century Textiles & Inds. Ltd.	0	0	1	0

27	Chambal Fertilisers & Chemicals Ltd.	0	0	0	0
28	Chennai Petroleum Corpn. Ltd.	0	1	1	0
29	Cipla Ltd.	0	0	0	0
30	Colgate-Palmolive (India) Ltd.	0	0	0	0
31	Container Corpn. Of India Ltd.	0	1	1	0
32	Crompton Greaves Ltd.	0	0	0	0
33	Cummins India Ltd.	0	1	1	0
34	D L F Ltd.	1	1	1	1
35	Dabur India Ltd.	1	0	0	1
36	Dr. Reddy'S Laboratories Ltd.	0	1	1	0
37	E I H Ltd.	0	0	1	0
38	Exide Industries Ltd.	0	1	1	0
39	Federal Bank Ltd.	0	1	1	0
40	Financial Technologies (India) Ltd.	0	1	1	0
41	G A I L (India) Ltd.	0	0	0	0
42	G T L Ltd.	0	0	0	1
43	Glaxosmithkline Pharmaceuticals Ltd.	0	0	1	0
44	Godrej Industries Ltd.	1	0	1	1
45	Grasim Industries Ltd.	0	0	0	0
46	Great Eastern Shipping Co. Ltd.	1	0	1	1
47	Gujarat Mineral Devp. Corpn. Ltd.	0	0	1	0
48	H D F C Bank Ltd.	1	1	1	1
49	Hero Honda Motors Ltd.	0	0	0	0
50	Hindalco Industries Ltd.	0	1	1	0
51	Hindustan Construction Co. Ltd.	0	1	1	1
52	Hindustan Petroleum Corpn. Ltd.	1	0	0	1
53	Hindustan Unilever Ltd.	0	0	0	0
54	Hindustan Zinc Ltd.	0	0	1	0
55	Housing Development Finance Corpn. Ltd.	0	0	1	1
56	I C I C I Bank Ltd.	0	1	1	0
57	I T C Ltd.	1	0	0	0
58	I V R C L Infrastructures & Projects Ltd.	0	0	0	0
59	India Cements Ltd.	0	0	0	0
60	Indian Hotels Co. Ltd.	0	0	1	0
61	Indian Oil Corpn. Ltd.	0	1	1	1
62	Indian Overseas Bank	0	0	0	1
63	Infosys Technologies Ltd.	0	1	0	0
64	Ispat Industries Ltd.	0	0	0	1
65	J S W Steel Ltd.	0	0	0	0
66	Jai Corp Ltd.	0	1	0	1
67	Jindal Saw Ltd.	0	1	1	0
68	Jubilant Organosys Ltd.	0	0	0	0
69	Karnataka Bank Ltd.	0	1	1	1
70	Kotak Mahindra Bank Ltd.	1	0	0	0
71	L I C Housing Finance Ltd.	0	0	0	0
72	Lakshmi Machine Works Ltd.	0	0	0	0
73	Larsen & Toubro Ltd.	0	0	0	0
74	Lupin Ltd.	0	0	1	0
75	M M T C Ltd.	0	1	1	0
76	Madras Cements Ltd.	0	0	0	0

77	Mahanagar Telephone Nigam Ltd.	1	1	1	1
78	Mahindra & Mahindra Ltd.	0	0	0	0
79	Mangalore Refinery & Petrochemicals Ltd.	0	0	1	0
80	Maruti Suzuki India Ltd.	0	0	0	1
81	Mercator Lines Ltd.	0	1	1	0
82	Moser Baer India Ltd.	1	1	1	1
83	N I I T Ltd.	1	0	1	1
84	N M D C Ltd.	0	0	0	0
85	N T P C Ltd.	0	0	1	1
86	Nagarjuna Construction Co. Ltd.	0	1	1	0
87	National Aluminium Co. Ltd.	0	1	1	0
88	Nestle India Ltd.	0	0	0	0
89	Neyveli Lignite Corpn. Ltd.	0	1	1	1
90	Oil & Natural Gas Corpn. Ltd.	0	1	1	0
91	Oracle Financial Services Software Ltd.	1	0	1	0
92	Oriental Bank Of Commerce	0	0	1	0
93	Patel Engineering Ltd.	1	1	1	1
94	Piramal Healthcare Ltd.	0	0	1	0
95	Power Finance Corpn. Ltd.	1	0	1	1
96	Power Grid Corpn. Of India Ltd.	0	0	1	1
97	Praj Industries Ltd.	1	0	0	0
98	Punjab National Bank	0	0	1	0
99	Ranbaxy Laboratories Ltd.	0	0	1	0
100	Reliance Capital Ltd.	0	0	0	1
101	Reliance Industries Ltd.	1	1	1	0
102	Reliance Infrastructure Ltd.	1	1	1	0
103	Rural Electrification Corpn. Ltd.	1	0	0	1
104	Sesa Goa Ltd.	0	0	0	0
105	Shipping Corpn. Of India Ltd.	0	0	1	0
106	Shriram Transport Finance Co. Ltd.	1	0	1	0
107	Sintex Industries Ltd.	0	1	1	0
108	State Bank Of India	0	1	1	0
109	Steel Authority Of India Ltd.	0	0	0	0
110	Sterling Biotech Ltd.	0	0	0	0
111	Sterlite Industries (India) Ltd	0	1	1	0
112	Sun Pharmaceutical Inds. Ltd.	0	1	1	0
113	Suzlon Energy Ltd.	0	0	1	0
114	Tata Chemicals Ltd.	0	0	0	0
115	Tata Communications Ltd.	0	0	0	0
116	Tata Motors Ltd.	0	0	0	0
117	Tata Power Co. Ltd.	0	0	1	0
118	Tata Steel Ltd.	0	1	1	0
119	Tata Tea Ltd.	1	0	1	0
120	Tech Mahindra Ltd.	0	1	1	0
121	Thermax Ltd.	0	1	1	0
122	Titan Industries Ltd.	0	1	1	0
123	Union Bank Of India	0	1	0	1
124	Unitech Ltd.	0	1	1	0
125	Voltas Ltd.	1	1	1	0
126	Wipro Ltd.	0	0	0	0

127	Zee Entertainment Enterprises Ltd.	0	0	0	0

BIBLIOGRAPHY

[1]. Albrecht, W D., and F. M. Richardson, 1990, "Income Smoothing by Economy sector", Journal of Business & Accounting, Winter, pp.713-730.

[2]. Ashari, N., H. C. Koh, S. L. Tan, and W. H. Wong, 1994, "Factors Affecting Income Smoothing Among Listed Companies in Singapore", Accounting and Business Research, pp.291-301.

[3]. Beidleman, C. R., 1973, "Income Smoothing: The Role of Management", The Accounting Review, October, pp.653-667.

[4]. Breton, Gaetan and Stolowy, Hervé, "A framework for classification of accounts Manipulations" (June 28, 2000). *HEC Accounting & Management Control Working Paper No. 708/2000*. Available at SSRN: http://ssrn.com/abstract=263290 or DOI: 10.2139/ssrn.263290

[5]. Carlson, S. J., and C. T. Bathala, 1997, "Ownership Differences and Firm Income Smoothing Behavior", Journal of Business Finance and Accounting, 24(2), pp. 181-195.

[6]. Easton, P. D., and M. E. Zmijewski, 1989, "Cross-sectional Valuation in the Stock Market Response to Accounting Earnings Announcements", Journal of Accounting and Economics 15: pp. 117-141.

[7]. Eckel, N., 1981, "The Income Smoothing Hypothesis Revisited", Abacus, June, pp. 28-40.

[8]. Gordon, M. J., 1964, "Postulate, Principle and Research in Accounting", The Accounting Review, April, pp.251-263.

[9]. Gordon, M. J., B. N. Horwitze, and P. T. Meyers, 1966, "Accounting Measurements and Normal Growth of the Firm", Research on Accounting Association, pp.221-231.

[10]. Hepworth, S. R., 1953, "Smooth Period Income", The Accounting Review, January, pp. 32-39.

[11]. Michelson, S. E., J. Jordan-Wager, and CW Wooton, 2000, "The Relationship Between the Smoothing of Reported Income and Risk-Adjusted Returns", Journal of Economics and Finance, 24 (2), Summer, pp. 141-159.

[12]. Moses, O. D., 1987, "Income Smoothing and Incentives: Empirical Tests Using Accounting Changes", The Accounting Review, April, 358-377.

[13]. Ronen, J., and S. Sadan, 1975, "Classificatory Smoothing: Alternative Income Model", Journal of Accounting Research, Spring, pp. 133-149.

[14]. Tseng, Li-Jung, Lai, Chien-Wen (December 2007), Relationship between Income Smoothing and Company Profitability: An Empirical Study, International Journal of Management, downloaded from proquest

[15]. Watts, R. L., and J. L. Zimmerman, 1987, Positive Accounting Theory, Englewood Cliffs: Prentice-Hall

[16]. White, G., 1970, "Discretionary Accounting Decisions and Income Normalization", Journal of Accounting Research, Autumn, pp. 260-274.

[17]. Zmijewski, M. E., and R. L. Hagerman, 1981, "An Income Strategy Approach to the Positive Theory of Accounting Standard Setting/Choice", Journal of Accounting and Economics 3: pp. 129-149.