An Analysis of Earnings Management in India : An Empirical Study

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Abstract

Using a sample of 1,035 company year observations for the years 2006 to 2010, an effort has been made in the present study to assess the magnitude of earnings management through accruals estimation. The study investigates the overall breadth and scope of earnings management behavior in a broader context through a comprehensive analysis of reported earnings across Indian industry sectors and individual company characteristics. The results affirmed that earnings management as depicted by discretionary accrual exists in the Indian companies. The results provide some evidence to the fact that earnings management has an unfavourable effect on the value of the company.

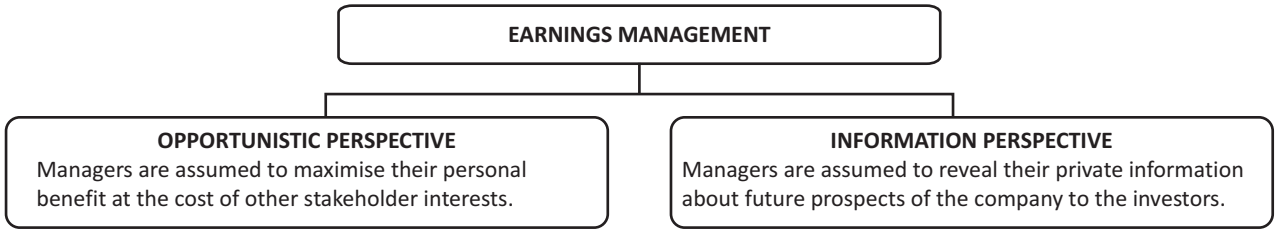
Keywords: **earnings management, discretionary total accruals, company characteristics**

JEL Classification: M 49

The issue of earnings management has become critical in today's capital market. There are number of instances where the companies have entered into earnings management activities, and that has resulted into accounting scandals. Earnings management has also been a concern of regulators and practitioners for several years because it erodes the quality of financial reporting. The widespread failure in financial reporting has largely been blamed on weak internal corporate governance systems.

Earnings Management is a form of earnings manipulation that is likely to reduce the reliability and relevance of earnings. Ayres (1994) stated that there are three methods for managing earnings: accruals management, the timing for the adoption of mandatory accounting policies and voluntary accounting changes. Most of the prior studies on earnings management have concentrated on how accounts are manipulated through accruals. Accruals management refers to changing estimates such as useful lives, the probability of recovering debtors and other year end accruals to try to alter reported earnings in the direction of a desired target (Ayres, 1994). The timing for the adoption of mandatory accounting policies is a second form of earnings management, particularly in relation to the possibility of an early adoption. Another method of managing earnings is to switch from an accounting method to another one. Earnings management can be carried through real activities such as timing asset sales, altering research and development expenditure, or delaying maintenance. It is usually relatively more costly and less suitable for managers to manage real activities. Furthermore, it is methodologically difficult for the researchers to spot such a manipulation. Researchers do not have a reliable means to distinguish the real activities undertaken to alter reported earnings from the ones solely undertaken for rational value maximization. For instance, if a company sells assets near the end of an accounting year, it becomes difficult for the researchers to bring out the main motive behind such a sale. Therefore,

Figure 1: Perspectives on Earnings Management



Source: Literature Review

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most of the researches in this area focus on earnings management through accruals manipulation.

The Concept of Earnings Management

Earnings, sometimes called the 'bottom line' or 'net income' , are the single most important item in financial statements. They indicate the extent to which a company has engaged in value-added activities. They are the signal that helps in resource allocation in capital markets. In fact, the theoretical value of a company's stock is the present value of its future earnings. Increased earnings represent an increase in company value, while decreased earnings signal a decrease in that value (Lev, 1989). Keeping in mind the importance of earnings, an organization's management should, in other words, learn to manage earnings.

The accounting literature takes two perspectives on earnings management as depicted in the Figure 1: **i)** an opportunistic perspective, and **ii)** an information perspective. Under the opportunistic or aggressive perspective, which has its roots in agency theory, managers are assumed to manipulate earnings to mislead stakeholders or to maximize their personal benefit at the cost of other stakeholders' interests. The information perspective, on the other hand, regards earnings management as a mechanism through which managers attempt to reveal their private information about future prospects of the company to the investors (Breton & Stolowy, 2000). Earnings management may have some informational value or it can be detrimental to the company value, all depends on the managerial intent involved. However, most prior research works were based on the opportunistic perspective on earnings management. According to Healy and Wahlen (1999) :

> "Earnings management occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers."

❖ **Incentives to Manage Earnings :** There are manifold motivations put forward in the literature focusing on the incentives managers receive to manipulate earnings, and studies also detail the consequences of such actions. The earnings management incentives interpret earnings management as opportunistic behavior by managers to maximize their utilities in the face of compensation contracts, debt contracts, and political costs. Thus, the overall evidence in the context of incentives to manage earnings suggests that mangers manipulate earnings for basically three motives, namely, contracting motivations, capital market incentives, and regulatory motivations.

Review of Literature

Earnings management research has grown into a dynamic body of empirical literature and conceptual framework. It is usually concerned with identifying the incentives for managing earnings, investigating the situations where these incentives are high, exploring the ways in which earnings are actually managed and finally, examining the economic consequences of earnings management (Bartov, Gul, and Tsui, 2001 ; Dechow, Sloan, & Hutton, 1996 ; and Teoh, Welch, &Wong 1998). However, the current review of literature on earnings management examines those studies that offered comprehensive evidence of earnings manipulation activities on the basis of industry and individual company characteristics.

Industry groupings have demonstrated considerable importance in prior research in the area of earnings management. Previous research has identified industry variation in earnings management practice. Nelson, Elliot, and Tarpley (2002) reported that earnings management practices were significantly attempted in the electronic industry. Kao and Chen (2004) used a sample of 350 electronic and 625 non-electronic Taiwanese firms to examine the effect of board characteristics on earnings management in these firms. It was found that non-electronic firms had higher agency cost and were prone to earnings management activities because of lower percentage of foreign institutional ownership. A number of studies have explored the earnings management behaviour of the companies at the individual company level through several characteristics known to be associated with earnings management such as firm size, profitability, capital intensity, leverage and risk. Nelson, Elliot, and Tarpley (2002) documented that auditors were more likely to waive earnings management attempts by large clients. Kim, Liu, and Rhee (2003) provided evidence that large and medium sized firms manipulated earnings more extensively than the small-sized firms to avoid earning decreases.

Wang (2004) argued that a firm's propensity for fraud is negatively related to the profitability of the firm's current assets. For a sample of Australian firms for the period between 2000 and 2006, Rath and Sun (2008) suggested that low profitable firms were associated with both income-increasing and decreasing earnings management activities. Kim et al. (2003) found that firms falling in the medium and high capital intensity ratio (CIR) exhibited higher propensity to report small positive earnings or earnings increased than the low CIR group. The results suggested that it was more difficult to manage earnings for the firms with high CIR than the firms with low CIR.

Rath and Sun (2008) documented contrary view of positive association between capital intensity ratio and discretionary accruals. Finally, previous studies have shown that a company's leverage tends to influence its earnings management activities. Jaggi and Lee (2000) examined a sample of firms during 1989-96 to analyze whether managers used income-increasing or decreasing discretionary accruals under different financial distress situations. Iturriaga and Hoffmann (2005) used a sample of 185 quoted non-financial Chilean firms for 1991-2001 to study the role of the capital structure and its ability to reduce the managers' discretionary choices in the accounting area. Concerning capital structure, the study revealed that there was a negative and significant influence of leverage on discretionary accruals. The results of the study by Piot and Janin (2007) did not support the contracting costs assumption derived from positive accounting theory, that is, the study found negative relationship between signed abnormal accruals and leverage. The sample comprised of 255 firm-years observations from French companies (1999-2001). Bertin, Alejandro, Iturriaga, and Félix (2007) examined the impact of capital structure proxied by leverage on earnings management in Chile, and the researchers reported that bank debt had a positive relationship with discretionary accruals, whereas public debt was found to be negatively related to accounting discretion given the incentives of managers to make good public image. While evaluating the role of audit committees in constraining earnings management in Hong Kong during 1999-2000, it was found by Jaggi and Lee (2002) that the debt equity ratio was positively related with discretionary accruals, signifying that a higher level of financial leverage encouraged firms to manage earnings. Iqbal and Strong (2010) suggested that low debt to equity ratio results in lesser earnings management activities.

Hypothesis of the Study

There is considerable evidence regarding the presence of earnings management in various economies. Based on the review of these studies, the following null hypothesis has been formulated:

$H0_1$: The sample companies did not engage in earnings management.

Objectives of the Study

The core objective of the study is to examine the earnings management practices in select Indian companies.

Methodology of the Study

The study was carried out for the financial year 2005-06 to the financial year 2009-10[1]. For the analysis, a subset of the BSE 500 index companies as on August 12,2009 were considered for the study. The sample has been classified on the basis of two-digit national industrial classification (NIC) code [2]. Several of the selected company industry groups were too small to form sufficiently large industry matched samples to calculate the earnings management variables for the sample companies. It was ,therefore, necessary to include only those industries that had sufficient company observations to ensure unbiased estimation. Following prior research (DeFond and Jiambalvo, 1991; Subramanyam, 1996), industry groups with less than six observations were dropped from the sample. The sample selection criteria resulted in a final sample size of 207 companies for the financial year 2005-06 to financial year 2009-10. For these companies, the required information for the years under study was then collected.

a) Data Sources : The data for the analysis was obtained from the PROWESS database maintained by the Center for Monitoring Indian Economy (CMIE).

b) Research Methodology : To determine the differences in means of discretionary total accruals across the industry groupings, one sample t-test had been used. To find out the differences in the means and median between the two sub-samples based on the magnitude of discretionary accruals, the univariate techniques of independent t-test (a

parametric test) and Mann Whitney U - test (a non-parametric test) had been applied. Independent t-test had been further used to analyze the sub-samples of absolute discretionary total accruals on the basis of company characteristics.

❖ **Earnings Management Model :** The current study focuses on the Modified Jones Model (Dechow, Sloan, and Hutton, 1996) as a key measure for earnings management for two reasons [3]. First, the results obtained from cross-sectional variation of the Modified Jones Model (hereafter, MJM) provide better estimates of the normal accruals than the time-series model (Subramanyam, 1996). Second, the MJM eliminates errors caused when discretion is exercised over revenue through credit sales. The cross-sectional approach automatically adjusts for changing industry-wide economic conditions, which influences accruals independently of earnings management. Moreover, Bartov, Gul, and Tsui (2001) found that only the Jones and Modified Jones Model were consistently able to detect earnings management The study utilized the Modified Jones Model to assess the magnitude of discretionary total accruals, which is used as a proxy measure for earnings management in the study. The unsigned/absolute value of discretionary total accruals is used to capture earnings management.

Results and Analysis of Earnings Management Practices

❖ **Overall Earnings Management :** Accounting earnings comprise of a cash flow component and an accruals component. Accruals are basically accounting entries that account for the deficiencies of cash accounting involving managerial discretion.

Following Teoh et al.,(1998), a step-by-step procedure was used to compute the different measures of earnings management. However, this section shows the results for the other measures of earnings management, namely discretionary current accruals (DCA), non-discretionary current accruals (NDCA), non-discretionary total accruals (NDTAC), discretionary long-term accruals (DLA), and non-discretionary long-term accruals (NDLA). Total accruals comprises of current accruals as well as long-term accruals.

The Table 1 shows that the discretionary component in the total accruals was the highest across all the industries. Machinery and equipment industry showed the highest value of discretionary accruals for the study period. The Table 1 provides preliminary evidence that discretionary accruals existed in all the sample industries, however, the degree of earnings management may differ.

Table 1: Industry Medians of the Signed Discretionary and Non-Discretionary Accruals for the Study Period

NIC Code	Industry group	DCA	NDCA	DLA	NDLA	DTAC	NDTAC
15	Manufacture of food products and beverages	-0.10	0.07	1.19	0.23	1.02	0.28
17	Manufacture of textiles	-0.16	0.05	0.57	0.23	0.43	0.21
24	Chemicals and chemical products	-0.10	0.00	0.83	0.16	0.67	0.11
26	Other non-metallic mineral products	-0.22	-0.07	0.71	0.17	0.55	0.14
27	Basic Metals	-0.10	0.01	0.94	-0.04	0.83	-0.07
29	Machinery and equipment	-0.05	-0.01	1.18	0.05	1.10	0.05
31	Electrical machinery and apparatus	-0.19	0.08	1.21	0.24	1.04	0.27
34	Motor vehicles	-0.23	0.02	0.99	0.54	0.81	0.50
40	Electricity, gas, etc.	-0.14	0.04	0.42	0.10	0.16	0.08
45	Construction	0.05	0.00	0.79	0.27	0.83	0.26
70	Real estate activities	0.13	-0.02	0.54	-0.18	0.53	-0.06
72	Computer and related activities	-0.11	0.05	0.64	0.28	0.55	0.30
92	Recreational activities	-0.05	0.00	0.51	0.11	0.43	0.07
97	Diversified	-0.24	0.04	1.14	0.15	0.83	0.16

Note: DCA = Discretionary Current Accruals; NDCA = Non-Discretionary Current Accruals; DLA= Discretionary Long-term Accruals; NDLA = Non-Discretionary Long-Term Accruals; DTAC = Discretionary Total Accruals; NDTAC = Non-Discretionary Total Accruals

Source: Secondary Data analysis

As put forth, the study used cross-sectional version of Modified Jones Model for accrual estimation in order to determine the extent of earnings management as proxied by discretionary total accruals. The model uses change in cash revenues and the level of property, plant and equipment (PPE) as the explanatory variables for predicting expected total accruals. Ordinary least squares (OLS) regression had been used to estimate the model for each industry for each year. The resulting model was then used to calculate abnormal accruals through the difference between actual and expected total accruals for each company. The Modified Jones Model had been estimated cross-sectionally for each of the fourteen industry-year regressions from 2006 to 2010. The Table 2 exhibits the mean values of coefficient estimates, associated p-values, and adjusted R^2 obtained in the fourteen industry regressions carried out each year. The table also shows the estimated parameters for the pooled industry regression (N = 70).

Table 2: Descriptive Statistics of Modified Jones Model Estimated Parameters

Year	N	Coefficient	α_0	α_1	α_2	Adjusted R^2
2006	14	Estimate	0.77***	1.31***	-0.11*	61.50%***
		p-value	0.000	0.000	0.083	0.000
2007	14	Estimate	0.78***	1.29***	-0.25***	64.50%***
		p-value	0.000	0.000	0.001	0.000
2008	14	Estimate	0.62***	1.61***	-0.10	54.10%***
		p-value	0.000	0.000	0.260	0.000
2009	14	Estimate	0.62***	1.32***	0.08	43.70%***
		p-value	0.000	0.000	0.381	0.000
2010	14	Estimate	0.64***	0.86***	0.11	10.70%
		p-value	0.000	0.000	0.262	0.000***
Pooled	70	Estimate	0.70***	1.32***	-0.08**	54.10%***
		p-value	0.000	0.000	0.026	0.000

*** indicates level of significance at 1 percent. The test of significance is two-tailed.

** indicates level of significance at 5 percent. The test of significance is two-tailed.

* indicates level of significance at 10 percent. The test of significance is two-tailed.

The results are obtained using SPSS 15.0. Source: Secondary Data analysis

The coefficient estimates of the model themselves are not of importance to draw inferences about earnings management, but hold some implications regarding the validity of the model. The results reported that the mean coefficient estimate on change in cash revenue ΔREV_{it} - ΔREC_{it} (i.e. α_1) is positive and statistically significant (at 1 percent significance level) implying that change in cash revenues is associated with income-increasing accruals in the sample. The coefficient on PPE should be negative as the level of PPE is linked to income-decreasing accruals such as depreciation, depletion, and amortization. The mean coefficient on PPE (α_2) in the industry year regression used in the study is negatively significant at 1 percent significance level. However, for the financial years 2009 and 2010, the mean coefficient on PPE is positive and insignificant, but the pooled results of the industry regression show the negative and significant coefficient for PPE. The adjusted R-square for all the industry year regression is satisfactory and comparable with the existing studies on the determination of the discretionary accruals using Modified Jones Model. Overall, it can be concluded that the sample companies did engage in earnings management. The results revealed that most of the sample companies indulged in income-increasing discretionary accruals than income-decreasing accruals.

❖ **Industry–wise Earnings Management :** The sample comprises of 207 companies across fourteen industry groups divided into broadly intotwo industry sectors as per the classification done in PROWESS. The bulk (69 %) of the sample companies belonged to the manufacturing sector, while the remaining (31%) belonged to the services sector. For examining the proposition that companies do not engage in earnings management, the mean discretionary total accruals (DTAC) were expected to be zero. The parametric t-test was used to test whether mean is zero across different

Table 3: Univariate Test of Discretionary Total Accruals (DTAC)				
NIC Code	Industry group	Parametric Test		
		Mean DTAC	t-statistic	p-value
15	Manufacture of food products and beverages	1.24	10.56***	0.000
17	Manufacture of textiles	0.45	3.70**	0.020
24	Chemicals and chemical products	0.75	52.62***	0.000
26	Other non-metallic mineral products	0.58	15.89***	0.000
27	Basic Metals	0.86	4.90***	0.008
29	Machinery and equipment	1.11	6.75***	0.003
31	Electrical machinery and apparatus	1.13	19.56***	0.000
34	Motor vehicles	0.74	4.00***	0.016
40	Electricity, gas, etc	0.17	3.15**	0.034
45	Construction	0.85	11.05***	0.000
70	Real estate activities	0.58	2.62*	0.059
72	Computer and related activities	0.69	5.32***	0.006
92	Recreational activities	0.42	4.16**	0.014
97	Diversified	0.84	11.32***	0.000
*** indicates level of significance at 1 percent.				
** indicates level of significance at 5 percent.				
* indicates level of significance at 10 percent.				
The results are obtained using SPSS 15.0. Source: Secondary Data analysis				

industry groups in the study.

The Table 3 presents the results of the one sample t-test of the discretionary total accruals. The results of the univariate test show that all the industry groups in the sample have discretionary total accruals significantly different from zero. For each of these 14 industry groups, the mean DTAC is significantly different from zero under standard p-values for manufacturing. There is evidence that earnings management is prevalent in the selected industry groups, suggesting that during the study period, there is an industry-wide variation in the practice of earnings management. Hence, the null hypothesis (H_{01}) that the sample companies do not engage in earnings management stands rejected. In order to examine the earnings management practices across industry sectors, a further analysis of the difference in income-increasing or income-decreasing activities in these two sectors was made. For the purposes of the study, the

Table 4: Discretionary Total Accruals by Industry Sectors and Groups										
Groupings	Manufacturing Sector			Service Sector			t-test		Mann Whitney U test	
	Mean	Median	Freq.	Mean	Median	Freq.	t-stat.	p-value	z-stat.	p-value
Panel A: By values										
DTAC	0.82	0.74		0.69	0.54		-3.12***	0.002	-5.03***	0.000
	0.82	0.74		0.71	0.55		-2.83***	0.005	-4.88***	0.000
Panel B: By extremes										
High DTAC	1.48	1.39	25%	1.53	1.35	25%	0.64	0.521	-0.41	0.681
Low DTAC	0.29	0.32	25%	0.14	0.14	25%	-10.51***	0.000	-7.38***	0.000
Panel C: By direction										
Pos DTAC	0.83	0.76	98%	0.75	0.59	93%	-2.10**	0.036	-4.07***	0.000
Neg DTAC	- 0.13	-0.1	2%	-0.15	-0.06	7%	-0.42	0.679	-0.27	0.79
*** indicates level of significance at 1 percent.										
** indicates level of significance at 5 percent. Source: Secondary Data analysis										

discretionary total accruals are categorized into three cluster groups: **(a)** by values (with and without absolute values); **(b)** by extreme observations (high and low groups of absolute values); and **(c)** by direction (positive and negative values) to examine the systematic differences between manufacturing and services sector companies. The Table 4 reveals that on an average, greater accounting discretions occurred in the manufacturing sector than in the services sector. When the discretionary accruals were grouped according to their values (with and without absolute values), the mean and median DTACs were lower for the services sector. The overall mean DTAC for manufacturing sector is 0.82, which is greater than the overall DTAC (0.69) for the services sector. The difference is found to be significantly different from zero (p-value = 0.000). While examining the absolute value of DTACs at aggregate levels, the same pattern holds with the services sector's DTAC (i.e. mean being 0.71, and median being 0.55) significantly below than that of the manufacturing sector (i.e. mean being 0.82 and median being 0.74). The sample observations are stratified according to their aggregate level of DTACs in order to examine the difference between the industry sectors. The sample companies were classified into quartiles according to their absolute discretionary total accrual values with the uppermost quartile being 'high DTAC' companies, and the lowest quartile implying 'low DTAC' companies. On an average, the companies in high DTAC (low DTAC) quartile are expected to be associated with higher (lower) levels of earnings manipulation.

The Table 4 shows that the mean and median DTACs for the high DTAC group companies in the manufacturing sector are 1.48 and 1.39 respectively, which is less than the mean (1.53) and median (1.35) for the high DTAC group in the services sector. The difference in means and medians are not statistically significant with p-values of 0.521 for difference in means and 0.681 for difference in medians. When the low DTAC groupings are considered, it is found that the mean for the manufacturing sector is 0.29, while that for services sector, the value is 0.14, and the differences in means is statistically significant at less than 1 percent significance level. The median value for the low DTAC groupings in the manufacturing sector is 0.32, and in the services sector, it is 0.14. The difference in medians is also significant with p-value less than 0.0001. This implies that for the high DTAC group companies, there is no significant difference between manufacturing and services sector. However, there is a significant difference between manufacturing and services sector with regard to low DTAC group companies.

Further, the study examined the broad directions of earnings management activity in these two industry sectors. In the table, the discretionary accruals are grouped into positive discretionary accruals (income-increasing) group and negative discretionary accruals (income-decreasing) group for both the manufacturing and services sector. Differences in mean and median suggest that the manufacturing sector companies engaged in more income-increasing earnings management than those in the services sector. Both the mean (0.83 for the manufacturing sector against 0.75 for the services sector) and the median (0.76 for the manufacturing sector against 0.59 for the services sector) of positive DTAC for the manufacturing sector are greater than those of the services sector, and their differences are also statistically significant at 5 percent level of significance. In terms of frequency, 98 percent companies in the manufacturing sector reported positive discretionary accruals, which are more frequent than the services sector group at 93 percent. However, there is insignificant evidence regarding income-decreasing activity (negative discretionary accruals) to suggest either manufacturing or the services sector group behaving differently during the sample periods.

Overall, it is reported that the manufacturing sector companies are more likely to engage in earnings management than the service-sector companies. Nonetheless, the industry sector did show earnings management in an income-decreasing manner, while the traditional form of earnings management by income-increasing behaviour is more ubiquitous. The results revealed significant results for low DTAC group companies than high DTAC group companies across the industry sectors. It was also found that income-increasing behaviour of earnings management is more prevalent in the manufacturing sector companies. The reasons for the predominance of the manufacturing sector in earnings management activities can be that this sector has more sales revenues as well as high fixed assets vis-à-vis the services sector. Another reason can be the high proportion of manufacturing sector companies in the overall sample. It can also be concluded that the period of the study coincides with the recent accounting scandals and the global financial crisis, resulting in companies engaging in income smoothing activities.

❖ **Company-wise Earnings Management :** Logistic analysis is used to investigate the association between the magnitude of earnings management and certain company characteristics. The company characteristics used in the study are company size, profitability, capital intensity, leverage, and risk. For the purposes of examining the discretionary accruals, portfolios of DTACs were formed following McNichols and Wilson (1988) and Kothari et al.

(2005). The portfolios were formed in order to ascertain company characteristics corresponding to those discretionary accrual portfolios. According to decile ranking of the absolute value of discretionary total accruals, ten portfolios were constructed to examine the magnitude of earnings management attributable to company characteristics. The study also separated the sample companies based on whether the magnitude of discretionary accruals, according to the Modified Jones Model, is high or low. High and low discretionary accruals are determined based on whether the company's magnitude of discretionary accruals is higher or lower than the cross-sectional median. Sorting the companies into two groups based on indicators of opportunistic earnings management is expected to provide more information on the characteristics of the companies. The cross-sectional median of discretionary total accruals is 0.70. This means that the companies having discretionary accruals above 0.70 were considered in high magnitude of earnings management category, and companies having discretionary accruals below 0.70 were considered in low magnitude of earnings management category. Parametric t-test was used to determine the difference in means of high and low magnitude earnings management companies (based on the median value of the discretionary total accruals) with regard to company characteristics.

The Table 5 reports the company size, profitability, capital intensity, leverage, and risk within each absolute DTAC portfolios. The decile ranking of discretionary accruals revealed that the companies in extreme decile portfolios in the sample possessed the highest and lowest levels of aggregate earnings manipulation characteristics. The lowest decile portfolio (1) has a mean absolute DTAC of 0.09, and the highest decile portfolio (10) has a mean DTAC of 1.86.

Table 5: Company Characteristics by Magnitude of Earnings Management

Portfolio Ranking	N	Abs DTAC	Size	Profitability	CIR	Leverage	Risk
1 (Low)	104	0.09	2.71	0.40	0.22	0.76	1.33
2	104	0.27	2.88	0.45	0.21	1.09	1.18
3	104	0.43	3.03	0.57	0.27	1.11	1.17
4	104	0.54	3.14	0.67	0.27	0.86	1.04
5	103	0.64	3.15	0.73	0.29	0.82	1.04
6	103	0.77	3.07	0.80	0.25	0.65	1.03
7	103	0.90	3.19	0.88	0.25	0.90	1.17
8	103	1.08	3.18	0.96	0.25	0.74	1.17
9	103	1.32	3.19	1.21	0.20	0.60	1.09
10 (High)	104	1.86	3.01	1.26	0.18	0.64	1.11
t-test of Low = High		0.79***	3.82***	19.28***	2.69***	3.76***	1.65*
p-value		0.000	0.000	0.000	0.008	0.000	0.099

Note: Abs DTAC is absolute values of discretionary total accruals obtained as the residual from the Modified Jones Model. Portfolio ranking is based on decile portfolios based on Abs DA. Means of each characteristic within each portfolio are reported. Size is the logarithm of the total assets at year end. ROA is return on assets as measured by net operating income divided by total assets. CIR is the proportion of net property plant and equipment to total assets. Leverage is debt equity ratio. Risk is measured by beta.

*** indicates level of significance at 1 percent.

** indicates level of significance at 5 percent.

* indicates level of significance at 10 percent. Source: Secondary Data analysis

It can be observed that the mean DTAC of the lowest decile is closer to zero, and the mean DTAC of the highest decile is different from zero. The results in the table show that as company size increases, there is an increase in the absolute value of discretionary accruals. Portfolio 7 seems to be comprised of the largest companies with a mean company size of 3.19, and Portfolio 1 has the smallest companies, with a mean logarithm of total assets of 2.71. The relationship between the company's size and discretionary accruals is reported to be mixed. After Portfolio 7, the company's size decreases, but the discretionary accruals increase. The difference in company sizes between the two extreme positions with t-statistics of 3.82 is significant at less than 1 percent level of significance. Profitability as measured by return on assets (ROA) is also found to be significantly different across extreme positions of high and low DTAC at less than 1 percent significance level. It can be seen from the table that the companies with lower ROA tend to

have lesser absolute DTAC. The absolute DTAC is higher for companies with extremely high ROA. The ROA of the sample observations follow an increasing pattern with regard to absolute discretionary total accruals. As regards to the capital intensity ratio (CIR) characteristic, the measure of capital intensity, the difference across the extreme categories/positions is statistically significant with t-statistic 2.69 at 1 percent significance level. The low DTAC portfolio companies show a higher CIR of 0.22, and high DTAC portfolio companies show lesser CIR of 0.18. The net plant, property, and equipment to total assets were less for higher portfolio of discretionary accruals. Mixed results were found for leverage as it has irregular pattern across the portfolios of discretionary accruals. The lowest portfolio (Portfolio 1) has a mean value of 0.76, Portfolio 5 has a value of 0.82, and at the highest portfolio (Portfolio 10) of discretionary accruals, the mean value is 0.64. There is no specific association between the magnitude of earnings management and leverage. Nevertheless, the t-test confirmed significant differences in leverage in the high and low earnings management category.

The results report that the risk as measured by beta is the highest with a mean value of 1.33 in the lowest portfolio of discretionary accruals. However, the companies constituting the highest portfolio of DTAC have comparatively lesser risk (1.11). The differences in the risk between high and low categories is found to be statistically insignificant at the 5 percent significance level. Overall, company size, leverage, capital intensity, and profitability played significant roles in earnings management behaviour of Indian companies between FY 2006 and FY 2010. The results suggest that size, leverage, and capital intensity show irregular pattern across portfolios. It was also reported that the differences in the extreme positions of high and low magnitude of earnings management were significant. However, it was found that the profitability increases with increase in the absolute values of discretionary accruals providing some evidence that companies indulge in income-increasing earnings management. Moreover, larger size and profitable companies indulge in income-increasing earnings management activity.

Findings and Conclusion

Comparing the mean discretionary total accruals on the basis of industry groupings, the results reaffimed that all the industry groups in the sample have discretionary total accruals significantly different from zero. Thus, the null hypothesis that the sample companies do not engage in earnings management stands rejected.

It is also revealed from the analysis of industry sectors that companies in the manufacturing sector exhibited high propensity for income-increasing earnings management than the companies coming under the services sector. Hence, it can be concluded that the period of the study coincided with the recent accounting scandals and the global financial crisis resulting in companies engaging in income smoothing activities. There is also strong evidence that larger size and profitable companies were more likely to engage in earnings management. In terms of direction of earnings management, it has been observed that larger size and profitable companies indulged in income-increasing earnings management activity. The results of the study are consistent with Barton and Simko (2002), Myers and Skinner (2000), Rangan (1998) and Nelson et al. (2002) that large companies are more likely to manage earnings than small companies. Large companies face more pressure to meet or beat analysts' expectations and have greater bargaining power with the auditors. Evidence supports that large companies have more room to manage earnings, given a wide range of accounting treatments available. Large companies have more current assets and stronger management power relative to small companies and hence, have an opportunity to manage earnings. However, the results for profitability were not consistent with the existing literature. The overall evidence based on the logistic regression results suggests that size and profitability are dominant features of companies engaging in earnings manipulation. The industry sector was also found to be affecting the magnitude of earnings management.

Scope for Future Research

Some of the issues and areas that have remained unexplored in the context of earnings management are suggested herewith. Meta-analysis can be conducted on the past studies to bring out more reliable results with reduced standard errors. The relationship of earnings management and conservatism can be investigated. Further, the ethical perceptions of managers regarding earnings management can also be studied. Quarterly results are also found to be prone to manipulations, and a study can be conducted to determine quarterly earnings management. A similar study can be conducted on the corporate governance mechanisms, and their impact on earnings management can be further explored.

End Notes

[1] The government's fiscal year in India is April 1- March 31 of the following year. Most Indian companies, thus follow this as their accounting period which is legally termed as 'financial year' under section 210 of the Companies Act, 1956. Thus, the financial year 2006 covers the period from April 1, 2005 to March 31, 2006.

[2] Since 1970, the NIC is an essential statistical standard for developing and maintaining comparable database according to economic activities.

[3] A number of different models have been developed to measure abnormal accruals. An example is the margin model developed by Peasnell, Pope, and, Young (2005) that formally links sales, accruals related to transactions with customers and suppliers, and operating profit. Simulations by Peasnell et al. (2005) indicate that the Jones and the modified-Jones Models are likely to be better at detecting revenue and bad debt manipulations than the margin model, whereas the margin model is better at detecting non-bad debt expense manipulations. Since there are no priors as to what form earnings management might take, to aid comparability with related prior research, the study has focused on the more familiar modified- the Jones Model.

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