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SEBI DRG STUDY

EARNINGS MANAGEMENT IN INDIA

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EXECUTIVE SUMMARY

Earnings management (EM) by companies is widespread throughout the world. The pressure to meet earnings targets of the market and thereby derive private benefits (in the form of managerial compensation) was found to be the driving force for EM world-wide. In the process the lack of quality of financial information disseminated by companies could affect investor decision-making and when detected by the market leads to severe losses for investors. The present study contributes to the literature by examining and quantifying the extent of EM in India by studying a cohort of 2229 listed Indian companies (non-financial) during 2008-2011. The study shows that the average earnings management in corporate sector(non-financial) in India is 2.9 per cent of the total assets of these firms which is comparable to the estimates in US, Europe and elsewhere in the world (around 1 to 5 per cent of total assets). The study reveals that small firms in India indulge relatively more in earnings management (10.6 per cent of the total asset) than the medium and large size firms. Industry-wise categorization shows that the companies in the line of business viz., construction and mining etc. are involved in relatively high levels of earnings management. Another finding of the study is that discretionary accruals are inversely related with leverage of companies. Further, the study did not find any statistically significant relationship between EM and performance of companies.

From the regulators point of view, these findings may be useful as it provides an additional tool for ensuring that financial reporting matches the real economic value of companies. Greater improvement in accounting quality and financial information can reduce asymmetry of information in capital market and protect investors who are ultimately lenders of capital for these companies. Efficiency and stability of capital market and financial system is a public good which every regulator seek to maximise. An increasing level of earnings management in a company or industry (above the average threshold of the industry) may provide much desired red signal for the regulator for enhanced monitoring and surveillance of the company/industry, so that integrity and stability of the financial system is not compromised.

Another policy implication of the study is the need for better and timely disclosure of financial information. Auditors can play an important role in monitor and disclosing financial reporting of companies so that management discretion (as accorded by the GAAP India) is minimized. The migration to IFRS planned in Indian corporate sector may reduce the management discretion over financial reporting. Given the international evidence that effective board of directors and audit committees can lead to reduced level of earnings management in companies, it is imperative that effectiveness of board of directors and audit committees may require greater attention of regulators.

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1. Introduction

Public companies face the pressure to meet or beat an important earnings benchmark, normally market earnings estimates. Companies that consistently meet or beat market earnings forecasts enjoy a high reputation as well as valuation premiums and lower cost of capital (Kasznik and McNichols, 2002; Brown and Caylor, 2005).When companies miss their earnings benchmarks, they suffer severe stock losses (Skinner and Sloan, 2002) and this adversely impacts executive compensation (Matsunaga and Park, 2001). As a result, managers of companies may use their discretion to manage earnings so that they can meet or beat current-year market estimates. If the intention of reporting earnings figures is to provide private information to the market about the prospects of the company (earning informativeness) it could be seen as something 'positive'. This is referred to as 'efficient manipulation' (Ronen and Sadan, 1981; Chaney and Lewis, 1995; Tucker and Zarowin, 2006, Cahan et al., 2008). On the other hand, if managers resort to earnings management with the intention of pursuing their individual goals (such as managerial compensation), this is considered 'opportunistic manipulation' and the earnings figures reported by such companies are of poor quality and a measure of the information risk associated with them (Bhattacharya et al., 2003; Leuz et al., 2003).

Earnings management (EM) is possible by manipulating accruals (more by altering discretionary accruals) or by manipulating real activities (operational activities)[1]. In practice, real activities based EM occurs during the fiscal year and is realized by the fiscal-year end. After that, it is still possible for managers to adjust the level of accrual-based EM. Thus, in the real world, managers use multiple EM techniques at the same time. The term 'accruals' corresponds to the earnings component that does not generate cash flows. Discretionary accruals are the portion of accruals over which management exercises discretion and this estimated portion of accruals is often used as a proxy of the earnings that are managed. EM, especially accrual-based earnings management is possible because accounting standards like Generally Accepted Accounting Principles (GAPP) allow alternative interpretation of accounting events (Teoh et al., 1988). The

[1] Most of the current research is on earnings management focuses on detecting abnormal accruals. Managers also have the incentives to manipulate real activities to meet earning targets (such as providing discounts to temporarily increase sales, overproducing to report lower cost of goods sold, and reducing discretionary expenses like R&D, advertising expenditures, sales of profitable assets, etc). See Graham et al. (2005), Roychowdhury (2006) and Zhang (2012) for a discussion on real earnings management.

sources of earnings management include the choice of accounting methods, application of accounting methods and the timing of asset acquisitions and dispositions. The numerous scandals at the global level, especially the high-profile cases like Enron, WorldCom, Parmlat, Waste Management, Olympus, etc., and Satyam and HMT in India have eroded the credibility of financial reporting and marred the quality of earnings (Paltrow, S.J, 2002). Arthur Levitt (1998), the former Chairman of Securities and Exchange Commission (SEC) of the United States observes that EM is widespread, calls it a 'number game' and portrays it as a 'gray area between legitimacy and outright fraud'. Prior studies have also revealed that EM is pervasive and has reached a level that significantly compromises the integrity of financial reporting (Healy and Wahlen, 1999).

Managers get a number of financial incentives to meet performance expectations and derive private gains in the form of gaining earnings-based bonuses, increasing their promotion prospects, avoiding termination, avoiding a decline in the value of their stocks and stock appreciation rights/options, avoiding a downgrade of the company's debt, and so on. (Paltrow, S.J. 2002; Ball, 2009). The consequence of earnings management is that the stock price of the company may get 'distorted' and pervasive manipulation of financial information could adversely affect investor confidence, drive stock markets down and raise the cost of capital significantly. Regulators across the world are concerned about the quality of financial reporting, maintaining an efficient capital market, ensuring investor protection, and the promotion of financial stability.

Research on earnings management in emerging markets like India is important as there is a high demand for capital by companies from global markets and foreign institutional investors play an important role in channeling this capital. Sustained flow of foreign capital (portfolio capital) into the Indian stock market can be fulfilled only if investors are protected from accounting frauds, financial misconduct and deceptive earnings management practices. Moreover, there is a substantial segment of retail investors in India who are unsophisticated and depend on financial reports of companies for making investment decisions and regulators have a fiduciary duty to protect these unsophisticated and gullible investors.

Firms make sales by either collecting cash or extending credit to their customers. Their accounting earnings are equal to their cash earnings plus accruals[2]. Insiders (managers) can opportunistically manipulate earnings figures as managerial discretion allows them flexibility, for example, in deciding how quickly to depreciate fixed assets and how large doubtful accounts should be. Earnings Management[3] thus can be defined as the discretionary use of judgment by insiders (managers) in financial reporting and in structuring transactions to misinform stakeholders about the underlying economic position and performance of the entity. Given this definition, earnings management is a financial reporting phenomenon (Beneish, 2001).

Earnings management has become a topic of increased interest for financial regulators. An understanding of earnings management practices helps regulator(s) to improve the functioning of capital markets, reduce asymmetry of information, reduce cost of capital and protect small and minority shareholders' interests. Important regulatory interventions to mitigate earning management practices in the US include the Regulation of Fair Disclosure passed in 2000 (to prohibit selective disclosure of material information) and the Sarbanes-Oxley Act of 2002[4]. These interventions allow auditors to have a more consistent and precise framework for evaluating the financial statements of firms. In turn, both financial analysts and public or private shareholders benefit from not only more accurate financial information, but also more consistent financial reporting by firms as well as across industries, thereby allowing the best possible conclusions to be drawn. Financial reporting plays two important roles in the capital market. Firstly, it enables capital providers (shareholders and creditors) to evaluate the return of potential

[2]Total accruals are defined as the change in non-cash working capital accounts minus depreciation and amortization.

[3]It is useful to distinguish earnings management (EM) from earnings manipulation, earnings fraud, and creative accounting (Ning, 2005, 2006). Earnings manipulation means that management takes deliberate steps to bring reported earnings to a desired level. EM refers to the earnings manipulation through exercising the discretion accorded by accounting standards and corporate laws, and/or structuring activities in such a way that expected firm value is not affected negatively. Earnings fraud refers to the earnings manipulation by violating accounting standards and corporate laws, and/or structuring activities in such a way that reduces expected firm value; while "creative accounting" refers to the earnings manipulation practices that do not violate accounting standards or corporate laws because of the lack of relevant standards or laws.

[4]Sections 302 and 404 of SOX have received the most attention. Section 302 deals with corporate responsibility for financial reports. In practice, this means that both the CEO and CFO of a public firm must take responsibility for the content of the financial report. Section 404 deals with the assessment of internal controls by management. Management is obliged to take responsibility for the establishment and maintenance of internal controls and it must assess the effectives of the internal control structure and the procedures for financial reporting. Section 404 also obliges the auditor to assess whether the assertions made by management are fair or not

investment opportunities. Secondly, it allows capital providers to monitor the use of capital once committed (Beyer et al., 2010). Both these functions are undermined when managers opportunistically manage financial reports to derive private benefits. EM is one of the reasons for poor accounting quality. Less earnings management is considered one criterion of better accounting quality (Barth et al., 2008).

Detecting earnings management is a challenging task. The literature has followed several approaches, with varying characteristics. First, there is a large amount of literature that attempts to identify discretionary accruals based on the relation between total accruals and hypothesized explanatory factors. This literature began with Healy (1985) and DeAngelo (1986), who used total accruals and change in total accruals, respectively, as measures of management's discretion over earnings. Jones (1991) introduced a regression approach to control for non-discretionary factors in influencing accruals, specifying a linear relation between total accruals and change in sales and property, plant and equipment. These analytical and methodological advances have enabled researchers and practitioners to detect and quantify the extent of EM using discretionary accruals as a proxy for earnings management. There is substantial evidence in the US, Europe and other emerging markets that managers engage in earnings management[5]. Empirical work has also recorded that regulatory interventions like RFD and SOX in the US has resulted in a lower earnings management (Ronen & Yaari, 2007, Wilson, 2009).

India is the one of the fastest growing economies of the world. The number of listed companies in the Bombay Stock Exchange has risen from 4,344 in 1985 to 5,133 at end of March 2012. The market capitalization of these companies was around 74 per cent of India's GDP at end of March 2012 (SEBI, 2012). It would be interesting to examine the magnitude of EM existing among firms in the private corporate sector in India as well as in the companies/industries where it is preponderant. This would provide valuable insights to regulators like the Securities and Exchange Board of India (SEBI) about the adequacy or changes in regulation required so that investors (especially unsophisticated investors) can make the best possible conclusions from financial statements.

[5] See Healey (1985), Guidry et al. (1999), Defond and Jiambalvo (1994), Barth et al. (1995, 2010), Kasznik (2002), Healey and Whalen (1999).

Objectives of the Study

The objectives of the study are as follows:

1. To examine whether earnings management exists in India among firms which are publicly listed;
2. If it exists, what is its magnitude compared with evidence from other countries;
3. What are the determinants of discretionary accruals – are they related to the firm's specific attributes (such performance, leverage, size);
4. What are the regulatory implications of EM?

The study is organized as follows: Section II reviews the literature on the subject and develops a hypothesis for testing. Section III discusses the database and methodology for the study. Section IV presents the empirical results and Section V summarizes the conclusions from the study.

II. Review of Literature and Hypothesis Development

The use of earnings management is widely debated and actively researched. Schipper (1989) defines EM as "..purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain..". Healy and Wahlen (1999) also define EM as a "…. managers' judgment '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…"(p.368). Mulford and Comiskey (2002) define EM as "…active manipulation of earnings towards a pre-determined target..". All these definitions focus on the legal accounting and economic choices that may be used to influence reported earnings.

Identifying earnings management is one of main challenges for both researchers and practitioners (Dechow et al., 2012); it is neither visible nor transparent. Academicians have devised indirect methods to estimate earnings management. One widely used method is to gauge the non-discretionary part of accruals. Isolating discretionary and non-discretionary accruals is the most important factor in developing a good earnings management detection model. The difficulty in isolating the non-discretionary and discretionary portions from total accruals by investigators (auditors, analysts, investors, and researchers) makes it convenient for firms

looking to engage in earnings management. The analysis of earnings management is often discretionary accruals focused (Dechow et al., 1995, 2012).

The literatures on earnings management especially discretionary accruals as a proxy for earnings management are far ranging and selectively reviewed in the following sections.

EM and Accrual Anomaly

One of the controversial issues in EM is whether accruals are priced efficiently by the market (future stock returns). Starting with Sloan (1996[6]), a large amount of literature has emerged on the idea that the stock market struggles to understand the accruals components of reported earnings. Sloan (1996) provides empirical evidence (based on US data) that the current earnings performance of US companies is more persistent for companies with low levels of accruals. Hence, investors tend to overweigh accruals and are subsequently surprised if accruals turn out to be less persistent than expected. This overestimation of the persistence of earnings leads to abnormal positive returns for low accrual companies and abnormal negative returns for companies which have low levels of accruals.

EM and Initial Public Offerings (IPO)

There is research on the reporting of earnings around IPOs of common stock (Teoh, Welch and Wong, 1988b). The study of Teoh et al. (1988b) shows that companies manage earnings in anticipation of going public with an equity issue (with an IPO).

EM and Seasoned Equity Issues

Studies by Shivakumar (1996), Teoh et al., (1988a) and Rangan (1998) also provide evidence of earnings management around seasoned equity offerings. They indicate that management faces the incentive to manage earnings upwards around a seasoned equity offering to maximize the offer price for its shares of the stock.

[6] For an up-to-date survey of the literature in this field, see Richardson et al. (2010).

EM and Executive Compensation.

In the literature, the executive compensation contract has been found to create strong incentives for earnings management. Theoretically, management compensation contracts are viewed as devices to reduce the conflict of interest between managers and shareholders and thereby maximize a firm's value. However, these compensation contracts may induce earnings management simply because managers' compensation is either tied to accounting earnings (for example, bonus) or stock prices. Studies by Cheng et al. (2005), Bergstresser and Philippon, (2006) and Jiang, Petroni and Wang (2010) have shown that executive compensation is more closely related to the value of the stock and that such 'incentivized' executives indulge in higher levels of earnings management.

EM and Audit Quality

Several studies have examined the relationship between audit quality and earnings management. Studies by Becker et al. (1998) and Francis et al. (1999) find evidence that discretionary accruals in firms audited by Big 6 auditors are less than in the firms audited by non-Big 6 auditors. This evidence shows that audit quality has an important bearing on the magnitude of EM.

EM and Investor Protection

One of the central conflicts in a company is the conflict between managers and investors. The moot question is whether strong and well-enforced investor protection, especially minority shareholders, can reduce EM. The study by Leuz et al. (2003) based on cross-country analysis (31 countries) shows that the level of earnings management decreases with investor protection.

EM and Analyst Coverage

Analysts play an important role in monitoring the companies. Research by Yu (2008) has shown that EM is relatively low in companies where analyst coverage is high.

EM and Sarbanes-Oxley Act of 2002 (SOX).

Cohen et al. (2008) report that accrual-based earnings management increased steadily from 1987 until the passage of SOX in 2002. After 2002, accrual-based EM recorded a

significant decline. Conversely, the level of real earnings management declined prior to SOX and significantly after the passage of SOX. These findings suggest that companies switched from accrual-based to real earning management methods after the passage of SOX.

EM in Pre and Post-IFRS period

One of the interesting areas of study is the effect of the introduction of International Financial Reporting Standards (IFRS on earnings management. The study of Barth et al., (2008) of 21 countries found that firms adopting IFRS were found to be indulging in 'less' earnings management and more timely recognition of losses compared with firms which did not adopt IFRS[7].

The study by Mara et al. (2011) of Italian companies after the introduction of IFRS (in 2005) found that board independence and audit committees play a significant role in moderating earnings management.

Hypothesis Development

There is also considerable literature (apart from the issues discussed above) on the various facets of earnings management. Earnings management can be behaviorally attributed to firm-specific or non firm-specific characteristics. Bartov et al. (2001) compiled evidence stating that firms may meet or beat their earning expectation through earnings management. Myers et al. (2007) argue that the firms that had preceding positive earnings are more likely to manipulate earnings, to keep a consecutive earnings growth trend; therefore, the performance of the firm in the prior year influences the manager's tendency to manipulate earnings to meet or exceed the analyst's earnings forecast. Based on the above literature, it is hypothesized that:

H1: Earnings management and firm performance are positively related.

Earnings management is also related to the firm's characteristics such as size, leverage, etc. It also makes practical sense that highly leveraged firms would have a greater impetus to meet or exceed their industry peers as well as analyst predictions when it comes to earnings

[7] For an early result on the economic consequences of IFRS, see Daske et al. (2006).

reporting. Any substantial drop in their share price would have serious negative effects on their leverage ratio, as it would increase in the event of a lowering of their stock price. Consequentially, an increase in the leverage ratio could erode investor confidence in the firm's ability to manage payments on the higher leverage ratio. As per contracting theory, a high levered firm is more likely to follow an income increasing approach (Watts and Zimmerman, 1986). The management of highly levered firms is more likely to report positive discretionary accruals. Consistent with these viewpoints, it is hypothesized that:

H2: Earnings management and firm leverage are positively correlated.

One of the firm attributes that has an important bearing on earnings management is size. Firm size is often used as a proxy for information availability in the market. Information for large firms is generally more available than small firms. Richardson (2000) finds evidence that large firms have less incentive to manage earnings than small firms. Lee and Choi (2002) also find that smaller firms are more likely to manage earnings to avoid reporting losses than large firms. Therefore, it is hypothesized that:

H3: Earnings management and firm size are negatively correlated.

III. Data Base and Methodology

Database

The focus of the present study is non-financial publicly-listed Indian companies. In order to capture the overall picture of Indian corporate sector, the investigation started with 3457 publicly listed companies available on S&P Capital IQ(CIQ)[8]. Financial data were initially collected initially for the period 1996-2012. Since the quality of financial data has varied substantially over a period of time, our endeavor was to obtain comparable panel data for which empirical investigations could be conducted. Since we could obtain comparable financial data for 2229 firms in India (which is the largest in the empirical investigation so far[9]) for the period 2008-2011, we focused our empirical investigation on this period .We excluded the year 2012 due to extraordinary discretionary accruals and considered 2012 as the outlier year. The market

[8] https://www.capitaliq.com/home.aspx

[9] One recent study (Rudra et al., 2012) was based on 67 firms listed in BSE.

capitalization of 2229 firms in 2011 account for almost the market capitalization of firms listed in the BSE. Financial institutions were excluded because of their different dynamics in earnings management as opposed to non-financial firms.

Methodology

The amount of managed earnings is the difference between reported earnings and true earnings. There are three methods of estimating earnings management. One approach is to focus on specific accruals such as provision of bad debts (widely used in the banking industry). The second approach is to investigate discontinuities in distribution earnings (for e.g., variability in earnings). But the most common way of detecting earnings management is through the 'accruals' portion of company financial statements. Accounting adjustments known as accruals is the difference between reporting earnings and operating cash flows. Accruals consist of a discretionary portion which is often manipulated by managers and a non-discretionary portion which is dictated by business conditions. Researchers use empirical models to decompose total accruals into non-discretionary and discretionary accruals. Discretionary accruals are then used as proxy for earnings management.

Discretionary Accrual Models

In the following section, we will discuss the five of the most widely used models in measuring non-discretionary and discretionary accruals[10]. Managers use accrual-based earnings management techniques to provide flexibility within accounting rules to manage firm earnings. One of the simplest methods to manage firm earnings is through early recognition of revenue. This method affects several financial statement accounts including revenue, accounts receivable and total assets. The models discussed below, try to detect earning management by measuring percentage changes between financial statement accounts.

[10] For a discussion of these discretionary models, see Dechow et al. (1995).

(a)*The Healy Model (1985)*

One of the earliest discretionary accrual models was developed by Healy in 1985. The model uses mean of total accruals scaled by lagged total assets from the estimation period as the measure of non-discretionary accruals. The Healy (1985) model assumes that non-discretionary accruals follow a mean reverting process. This implies the following model for non-discretionary accruals:

$$NDA_t = \frac{\sum TA_t}{T} \quad (1)$$

Where:

NDA = estimated non-discretionary accrual;
TA = total accruals scaled by lagged total assets;
t = 1, 2...T is a year subscript for year included in the estimation period; and

Unlike other accrual models, the Healy model predicts that systematic earnings management occurs in every period. Thus, in order to estimate mean total accruals, Healy divided the sample into three groups, with earnings predicted to be managed upward into one group and downward into the other two groups. This approach is equivalent to treating the group that is predicted to be managed upwards as the estimation period and the other two groups as the event period. The mean total accruals from the estimation period then represent the measure of non-discretionary accruals.

(b)*The DeAngelo Model* (1986)

The underlying assumption of the DeAngelo(1986) model is that non-discretionary accruals follow a random walk process. The DeAngelo (1986) model uses the previous year's total accruals (TAt-1) scaled by lagged total assets (At-2) as a measure of non-discretionary accruals. The DeAngelo model can be viewed as a special case of the Healy model in which the estimation period for non-discretionary accruals is restricted to previous year observations. Dechow (1995) suggests that the DeAngelo model is more appropriate to be used when discretionary accruals follow a random walk, while the Healy model is appropriate to be used when discretionary accruals follow a white noise process around a constant mean. The empirical

results suggest that the total accruals follow an approximate white noise process (Dechow, 1995).

$$NDA_t = TA_{t-1} \quad (2)$$

Where:
NDA_t = non-discretionary accrual at time t;
TA_{t-1} = Total accrual at time $t-1$;
A_{t-2} = Total Asset at time $t-2$.

(c.)*The Jones Model (1991)*

Jennifer Jones (1991) proposes a model that attempts to control for the effects of changes in a firm's economic circumstances on non-discretionary accruals. She indicates that changes in total assets, gross revenue, and gross property plant and equipment (PPE) are the determinants of non-discretionary accruals. The idea of the Jones (1991) model is that sales revenue proxies for the economic events that generate current non-discretionary accruals, while gross PPE controls for non-discretionary accruals related to depreciation expense. Thus the Jones (1991) model is based on two key assumptions. Firstly, sales revenue is assumed to be unmanaged. Secondly, changes in current assets and liabilities are assumed to be driven by changes in sales revenue. The Jones (1991) model for non-discretionary accruals in the event year is:

$$NDA_t = \alpha_1 \ {}^{1}/_{A_{t-1}} + \alpha_2 \frac{\Delta REV_t}{A_{t-1}} + \alpha_3 \frac{PPE_t}{A_{t-1}} \quad (3)$$

Where
ΔREV_{it}= revenue of firm i in year t less revenue in year t - 1 scaled by total asset at t -1;
PPE_{it} = gross property plant and equipment of firm i in year t scaled by total asset at t -1;
A_{t-1}= total assets at t-1; and
α1, α2, α3 = firm-specific parameters.
Estimates of the firm-specific parameters (α1, α2, α3) are generated using the following model in the estimation period:

$$TA_t = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \Delta REV_t + \alpha_3 PPE_t + \varepsilon_t \quad (4)$$

(d) *The Modified Jones Model (1995)*

A major weakness of the Jones (1991) model is its inability to capture the impact of sales-based manipulation, since changes in sales are assumed to result in a non-discretionary model (Dechow et al. 1995). In an attempt to overcome this limitation, Dechow et al. (1995) proposed a modification to the standard-Jones model. The modified Jones model is identical to

the standard Jones model (1991) with the exception that the change in debtors (ΔREC) is subtracted from ΔREV at the second stage (equation 6). The original Jones model (1991) uses a three-stage approach to bifurcate total accruals into their discretionary (managed) and non-discretionary components. In the first stage, total accruals (TA) are estimated using the following definitional equation:

$$TA_t = \frac{\Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta STD_t - Dep_t}{A_{t-1}} \quad (5)$$

Where ,
TA = Total accruals,
ΔCA= change in current assets
ΔCL = change in current liabilities
$\Delta Cash$ = change in cash and cash equivalents
ΔSTD = change in debt included in current liabilities
Dep = depreciation and amortization expense
A = Total Assets

In the second stage, the Modified Jones Model (1995) is used to compute non-discretionary accruals (NDA). The model is:

$$NDA_t = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2(\Delta REV_t - \Delta REC_t) + \alpha_3 PPE_t + \varepsilon_t \quad (6)$$

Here,α_1,α_2, and α_3 are firm-specific parameters for year *t*,
ΔREV = change in revenues scaled by total assets;
ΔREC= change in receivables scaled by total assets;
PPE = gross property, plant and equipment scaled by total assets; and

Estimates of the firm specific parameters, α_1, α_2, andα_3 are generated using the equation (7) in the estimation period. Total accruals are regressed on the change in sales (ΔREV) and the gross level of property, plant and equipment (PPE) for the panel. Thus, the model is:

$$TA_{it} = a_1 \frac{1}{A_{it-1}} + a_2 \Delta REV_{it} + a_3 PPE_{it} + \varepsilon_{it} \quad (7)$$

The descriptions of variables are the same as mentioned in previously discussed equations. a_1, a_2 *and* a_3 denote the OLS estimates of α_1, α_2 and α_3. The estimates of α_1, α_2, and α_3 are those obtained from the original Jones Model. The only adjustment relative to the

original model Jones Model is that the change in revenues is adjusted for the change in receivables in the event period to determine non-discretionary accruals.

In the third stage, after computing total accruals (TA) and nondiscretionary accruals (NDA), discretionary accruals (DA) were computed using equation (4):

$$DA_{it} = TA_{it} - NDA_{it} \quad (8)$$

Positive DAs suggest income-increasing manipulations, while negative DAs indicate income-decreasing manipulations. Managers have incentives to manage earnings not only upward, but also downward. In good years, they could want to hide some earnings for future reporting use, while in bad years they could take a bath (overstate bad assets or take a large restructuring charge) to make future earnings targets easier to meet.

(e) *Industry Model*

The industry model was used by Dechow and Sloan (1991). Similar to the Jones model (1991), the industry model relaxes the assumption that non-discretionary accruals are constant over time. The industry model for non-discretionary accruals is

$$NDA_t = \gamma_1 + \gamma_2 median(TA_t) \quad (9)$$

Among the models described, modified Jones model is widely used in empirical investigations. Dechow et al. (1995) finds that that a modified Jones model provides the most powerful test of earnings management compared to the Healy, DeAngelo and standard Jones and industry model. Dechow et al. (1995) evaluated the performance of various accrual models discussed above in terms of specification (i.e., the probability of a Type 1 error) and power (i.e., the probability of a Type II error) and found the Modified Jones Model to be superior. Similarly, Guay, Kothari and Watts (1996) and Peasnell, Pople and Young (2000) also corroborate the conclusions of Dechow et al. (1995). Hence, we adopt the Modified Jones Model for empirical investigation with respect to India.

IV. Empirical Results

This section briefly reviews prior literature on EM in the Indian context and presents the results of the present study on earnings management in the Indian corporate sector (non-financial) in India during 2008 to 2011 and its determinants (as enunciated by hypothesis in the section III).

Although there is considerable empirical literature of earnings management especially in the context of the US, in the Indian context, there are only limited studies have been done (Shen and Chih 2005; Chikpalkatti and Rishi 2007; Sarkar et al. 2008; and Rudra and Bhattacharjee (2012). The Shen and Chih (2005) study found earnings management to be prevalent among Indian banks. Chipalkatti and Rishi (2007) found banks with low profitability indulged in earnings management. Sarkar et al. (2008) found a negative relationship between board independence and earnings management. Rudra and Bhattacharjee (2012) found some evidence of adoption of IFRS leading to low earnings management. The studies in the Indian context are based on a relatively small sample and lack robustness[11]. In the following paragraphs, we present the results of our empirical study with respect to India.

Table 1 reports the descriptive statistics of estimates of discretionary accruals (DA) in the Indian corporate sector during 2008-2011. The average discretionary accruals is estimated at 2.9 percent of the average total assets of Indian companies (of around $ 399 million) during 2008-2011, which is slightly above of the recent estimates of 1% percent of the total assets in the US context (Sra et al., 2013) . In the pre-SOX period, discretionary accruals were relatively higher - 1 to 5 per cent of the total assets of US corporations (Dechow, 1995). The magnitude of discretionary accruals (DA) in the Indian context during 2008-2011 varied substantially as evident from the minimum and maximum values. The average return on assets (ROA) was around 7.5 percent and here also, the variation was substantial as evidenced by the minimum and maximum values. On an average, most of the firms in the cohort had positive returns (ROA). The average leverage ratio of the Indian non-financial corporate sector at 0.54 is relatively lower; and median value is also similar (0.56).

[11] The study by Rudra and Bhattacharjee (2012) found discretionary accruals among Indian firms to be as high as 48.3 percent (of total assets) for 2010.

Table 1: Descriptive Statistics

This table presents the variables for the analysis of measuring earnings management through discretionary accruals (calculated by the Modified Jones Model) of 2229 publicly listed Indian companies from 2008-2011. The variable SIZE is total assets. ROA is return on assets. LEV is leverage (Total Liabilities/ Total Assets).

	Discretionary Accruals (DA)	SIZE(in million $s)	LOGSIZE	ROA	LEV
Mean	0.029	399.087	1.635	0.075	0.536
Median	-0.020	40.700	1.610	0.072	0.563
Maximum	17.645	68989.100	4.839	2.923	13.636
Minimum	-19.651	0.011	-1.959	-1.455	0.000
Skewness	0.534	14.764	0.293	2.563	11.217
Kurtosis	293.754	296.745	3.146	87.397	356.869
Std. Dev.	0.633	2203.515	0.850	0.102	0.328
Observations	8916	8916	8916	8916	8916

Table 2 reports the industry-wise picture of discretionary accruals in the Indian corporate sector (non-financial). As is evident from Table 2, the highest magnitude of discretionary accruals and hence earnings management was recorded in the construction and mining sectors (9.4 percent and 3.4 percent of total assets respectively). The manufacturing sector had, on an average, discretionary accruals of the magnitude of 2.6 percent of the total assets. The service sector also had a relatively high earnings management (discretionary accruals were around 3.3 percent of total assets), while the trade sector (wholesale and retail) observed negative discretionary accruals.

Table 2: Industry-wise Average Discretionary Accruals

This table presents the industrial sector-wise average discretionary accruals (calculated by the Modified Jones Model) of 2229 publicly listed Indian companies from 2008-2011.Average discretionary accruals are multiplied by 100 to get the average in percentage.

Four-digit SIC Codes	Industry Classification (Sector-wise)	Number of observations	Average Discretionary Accruals (DA)
01XX – 09XX	Agriculture, Forestry, and Fishing	36	1.7%
10XX; 12XX – 14XX	Mining	160	3.4%
15XX – 17XX	Construction	340	9.4%
20XX – 39XX	Manufacturing	6388	2.6%
40XX – 49XX	Transport, Communication, Electric, Gas, and Sanitary Services	376	2.1%
50XX – 51XX	Wholesale Trade	252	-1.1%
52XX – 59XX	Retail Trade	76	-4.2%
70XX; 72XX – 73XX; 75XX – 84XX; 86XX – 89XX	Services	1228	3.3%
91XX – 99XX	Others	60	23.3%

Table 3 reports discretionary accruals according to size of the companies. As is evident, small firms have higher discretionary accruals (10.6% of total assets) compared to medium sized companies (0.4% of total assets) and large sized companies (0.3% of total assets). Thus, it is evident that EM (proxied by discretionary accruals) and size of the company are inversely related (H3). This result is as per risk-reward theory – smaller firms are more risky and demand higher returns from investors and hence managers of small firms indulge in higher EM. This is also evident from the negative correlation between discretionary accruals (DA) and size reported in Table 4.

Table 3: Firm Size and Average Discretionary Accruals

This table presents the average of discretionary accruals (calculated by the Modified Jones Model) of 2229 publicly listed different-sized Indian firms. Here Q1 = 10.60 million and Q3 = 149.93 million. If TA (total assets) < Q1, firm size is considered as small and if TA > Q3, firm size is assumed to be large. Firms with assets sizes from Q1 to Q3 are taken as medium-sized firms. Average discretionary accruals are multiplied by 100 to get average in percentage.

Firm Size	**Average Discretionary accruals(DA)**
Small (< Q1) (n = 2227)	10.6%
Medium (Q1 to Q3) (n = 4460)	0.4%
Large (> Q3) (n = 2229)	0.3%
All (n = 8916)	2.9%

Table 4 also reports the correlation between discretionary accruals (DA) and leverage (LEV) and performance (ROA). Evidence revealed in Table 4 shows that there is a negative and statistically significant relationship (at 1% level of significance) between discretionary accruals and leverage [negating hypothesis 2 (H2)]. This result is not surprising as leverage is relatively low in the Indian non-financial corporate sector. Lastly, we also found a negative and statistically insignificant relationship between discretionary accruals and performance of companies thereby negating hypothesis 1(H1).

Table 4: Correlations among variables -DA, SIZE, LEV, and ROA

This table presents the correlations among variables for the analysis of measuring earnings management through discretionary accruals (calculated by the Modified Jones Model) of 2229 publicly listed Indian companies from 2008-2011. The variable SIZE is total assets. ROA is return on assets. LEV is leverage (Total Liabilities/ Total Assets).

	DA	**SIZE**	**LEV**
SIZE	-0.011 (0.294)		
LEV	-0.053 (0.000)***	0.031 (0.003)***	
ROA	-0.004 (0.711)	0.025 (0.017)**	-0.069 (0.000)***

Note: Figures in () are p-values.
***, **, and * indicate 1%, 5%, 10% significant levels.

V: Concluding Observations

The empirical study of discretionary accruals of 2229 listed Indian companies (non-financial) during 2008-11 shows that the estimated average discretionary accruals of the corporate sector in India is 2.9 per cent of the total asset of these firms. The study reveals that small-sized companies in India indulge in relatively more earnings management (10.6 percent of the total assets) than medium- and large-sized firms. Industry-wise categorization shows that the companies in businesses such as construction and mining, etc. indulge in relatively high levels of earnings management. Another finding of the study is that discretionary accruals (proxy for EM) are inversely related to the leverage of companies. Further, the study did not find any statistically significant relationship between EM and the performance of companies.

These findings provide a yardstick about the quality of financial accounts in the corporate sector in India and its relevance for investor decision-making. The magnitude of EM is confidential information and known only to the managers of the company. In capital markets, sophisticated investors (like institutional investors) are capable of understanding the existence

and magnitude of EM and the EM risk. It is the unsophisticated investors who are gullible to EM practices. Those who prepare financial accounts have a fiduciary duty to reflect real economic outcomes in the financial accounts. When managers do not voluntarily disclose this private information, there is a need for enhanced disclosure regulations. Accounting standards, disclosure requirements, auditors, analysts and regulators enforcement actions can certainly reduce information asymmetry in the capital market and ensure that the accounting system and financial reporting provides information about firm value.

The study recommends enhanced surveillance, monitoring and regulatory action by the securities market regulator, for a company or industry, which is indulged in high level of earnings management (above the average threshold of the industry). Independent (external) audit is the primary institutional mechanism for verification of financial reports. However, there is a cost of committing to a particular level of independent audit in terms of quantity and quality of audit resources required. The chosen level of independent audit will determine the accuracy of financial reports and independence from managerial manipulation.

The quality of financial reports, financial restatements and instances of fraud are some mechanisms through which financial reporting can be evaluated. EM studies provide corroborating mechanisms to the prevalence and magnitude of EM. External monitoring agencies like external auditors, analysts and institutional investors can play an important role in preventing aggressive (deceptive) financial reporting by companies. EM studies can provide additional tools to regulator(s) to verify the quality of financial reports so that capital providers (shareholders and creditors) can evaluate the return potential of investments. Greater improvement in accounting quality and financial information can certainly reduce asymmetry of information in capital market and protect investors. Efficiency and stability of capital market and financial system is a public good which needs to be maximized.

Another policy implication of the study is the need for better and timely disclosure of accounting information. Auditors/regulators have an important role to play in this task. They are required to monitor and disclose items in which management discretion is exercised widely. The migration to IFRS planned in the Indian context could reduce the avenues of managerial

discretion in financial reporting. Given the international evidence that an effective board of directors and audit committees can lead to reduced level of earnings management in companies, it is imperative that regulators pay greater attention to the effectiveness of these boards and committees. Besides, the enforcement of strong investor protection laws, especially to protect the interests of minority shareholders can certainly reduce the level of earnings management as proved by international evidence.

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