

Earnings Management Strategies during Financial Distress

**Neerav Nagar
Kaustav Sen**

W.P. No. 2016-02-03
February 2016

The main objective of the working paper series of the IIMA is to help faculty members, research staff and doctoral students to speedily share their research findings with professional colleagues and test their research findings at the pre-publication stage. IIMA is committed to maintain academic freedom. The opinion(s), view(s) and conclusion(s) expressed in the working paper are those of the authors and not that of IIMA.



**INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD-380 015
INDIA**

Earnings Management Strategies during Financial Distress

Neerav Nagar*
Assistant Professor
Indian Institute of Management Ahmedabad
Vastrapur, Ahmedabad-380015, India
Tel: +91 7966324944
Email: neeravn@iimahd.ernet.in

Kaustav Sen
Associate Professor
Lubin School of Business, Pace University
1 Pace Plaza, New York, NY-10038
Tel: +1 212 618 6413
Email: ksen@pace.edu

*Corresponding author

Earnings Management Strategies during Financial Distress

Abstract

We examine whether financial distress and its severity have a role to play in managers' decisions with respect to the choice of earnings management strategies. Our results suggest that firms in initial stages of distress engage in real earnings management through a reduction in the spending on selling, general and administrative expenses, and engage in classification shifting to increase profitability and liquidity. When distress becomes severe, firms cut-back on production, engage in income-increasing accruals management, and increase their spending on selling, general and administrative expenses. Initial under-spending on selling, general and administrative expenses is opportunistic with an intention to show improved performance. In extreme distress, increase on such spending is a sound economic decision. Our findings provide insights into how managers of distressed firms trade-off between liquidity, profitability and solvency in both short-run and long-run.

Keywords: Earnings management; financial distress; accruals earnings management; real earnings management; classification shifting.

JEL Codes: M41; G33.

Introduction

Financial distress refers to a firm's inability to service its debt or other obligations. Such inability emanates from poor cash flows and profitability. Distress throws new challenges before managers of the firm to take real economic actions which lead to an improvement in the firm's long-run performance. However, since in these circumstances managers fear debt covenant violations and job loss, and sound economic decisions may give returns only in the long-run, short-term incentives outweigh long-term incentives and they may indulge in tactics which shows an improved short-term performance in no time.

Managers of companies in distress, thus commit fraud to cover up the adverse performance - in order to get more liquidity from the banks or for their personal benefit.ⁱ They are more likely to indulge in improper revenue recognition and manipulation of expenses, liabilities and accounts receivable (Deloitte Forensic Center, 2008).

Managers of financially distressed firms have incentives to manage earnings and cash flows. They may do so to hide the distress so that they can obtain financing (Rosner, 2003) or to reduce the probability of bankruptcy, acquisition or hostile takeover (Frost, 1997). By managing earnings, firms can avoid violation of debt covenants (Dichev and Skinner, 2002; Jaggi and Lee, 2002; DeFond and Jiambalvo, 1994; Sweeney, 1994). Rogers and Stocken (2005) suggest that managers worry about losing their jobs in difficult times and hence provide highly optimistic forecasts, thereby promising to restore good financial condition. Managers may manage earnings to achieve these optimistic forecasts. Distress also creates problems for firms related to labor, suppliers, customers

and creditors. To avoid these problems, managers may manipulate earnings (Koch, 2002).

Motivation

Firms in financial distress need to take actions which improve their cash flows and profitability both in the long-run and short-run. Hofer (1980), Slatter (1984), Sudarsanam and Lai (2001) and Loui and Smith (2006) discuss that such firms initially opt for operating costs reduction, followed by revenue generating strategies. These techniques generate cash flows and improve earnings in the short-run but are fire-fighting in nature and may not lead to long-term turnaround of the firm. Long-term performance improvement comes through new product market focus, diversification, disposal of unprofitable assets etc. (Grinyer et al., 1988).

The literature on earnings management finds that managers attempt to increase earnings in the short-run through opportunistic changes in accounting estimates. They do so due to short-term incentives like earning more bonus (Healy, 1985) or stock-based compensation (Cohen et al., 2008), getting external financing (Cohen and Zarowin, 2010) and many other incentives.

A common link between this literature on turnaround strategies and earnings management is managers' prompt desire to improve current performance without worrying about the future. In this paper, we propose to fill a gap in the literature by examining distressed firms' use of such strategies which seem to be a response to the

adverse financial circumstances, but can actually be the result of opportunistic intent. Further, do these firms choose between accounting and real strategies? We add to the prior literature on accruals management in financially distressed firms, and examine use of above-mentioned real strategies in these firms.

We also examine whether managers of distressed firms use classification shifting to show increased core earnings. Next, we analyze impact of the use of these techniques on future operating performance of the distressed firms to ascertain whether real actions are really fire-fighting or aim for long-run improvement. Overall, we contribute to two streams of literature, turnaround strategies in distress and accounting research on earnings management by combining both.

Earnings Manipulation

The literature on earnings manipulation suggests that managers do artificially inflate earnings. Managers use income-increasing accruals, which involves making opportunistic estimates and judgments like reducing the allowance for bad debts, reporting fictitious sale, capitalizing expenses, avoiding write-offs etc. Managers can also manipulate real activities by giving excessive sales discounts to increase sales at the end of the year or timing the sale of assets to recognize gains in difficult period. Such activities can have adverse future performance implications. Another manner in which improved performance can be shown is by classifying some operating expenses as income-decreasing special items (e.g. restructuring costs), which boosts the core/operating earnings without having any effect on the net income.

Accruals Earnings Management

Accruals earnings management (AM) refers to change in accounting methods or use of opportunistic estimates to inflate earnings. Such manipulation doesn't have any effect on cash flows. Examples include reporting fictitious revenues, booking sales with a right of return, reducing the provision for bad debts, avoiding or delaying write-offs of assets and inventories etc. Such a technique affects the timing of the recognition of earnings and thus, such accruals reverse.

For example, a sale of goods booked in year t on which customer holds right to return, will increase the earnings in year t . However if the customer returns the goods in year $t+1$, accounting for this return will lead to a decline in the earnings in year $t+1$. Alternatively, if managers decide not to account for this return in year $t+1$ balance of account receivables remains constant. A series of manipulative actions like these increase the book value of firm's operating assets and constrain firm's future ability to further manipulate the earnings. In other words, firm's balance sheet becomes bloated (Barton and Simko 2002) and imposes a cost on the firm. These kind of accounting manipulations are generally under the scrutiny of auditors and regulators and comparatively, easy to detect. If caught, firms may receive an Accounting and Auditing Enforcement Release (AAER) and associated penalties.ⁱⁱ In India, companies like Satyam Computers and PricewaterhouseCoopers have been alleged to have manipulated accruals.ⁱⁱⁱ

Though accruals of a firm may give an indication of earnings management, accruals are also the result of firms' underlying fundamentals. e.g. A rapidly growing firm may have

high revenues and thus, high receivables. Substantial amount of literature exists on calculation of abnormal or discretionary accruals (Jones, 1991; DeFond and Jiambalvo, 1994; Dechow et al., 1995; Dechow and Dichev, 2002; Kothari et al., 2005; Dechow et al., 2003) which are unlikely to be related to a firm's fundamentals and are likely to be manipulated. Healy and Wahlen (1999), Dechow and Schrand (2004) and Dechow et al. (2010) review this literature.

We use Jones model (Jones 1991) and Modified Jones model (DeFond and Jiambalvo, 1994; Dechow et al., 1995) to measure abnormal accruals.

$$\text{Acc}_t/\text{TA}_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (\Delta S_t/A_{t-1}) + \beta_2 (\text{PPE}_{t-1}/A_{t-1}) + \varepsilon_t$$

This equation is run for every industry (2-digit SIC/NIC) and year. Normal level of accruals is estimated for every firm-year using coefficients from corresponding industry-year model. For every firm-year, abnormal accruals (in Jones model) are calculated by subtracting normal accruals from actual accruals. In Modified Jones model, change in receivables is deducted from change in sales (ΔS_t) in the second stage, while estimating abnormal accruals.

Real Earnings Management

Real earnings management (RM) or manipulation of real activities refers to real decisions taken by firms to affect cash flows and earnings. If aim is to inflate earnings, managers may cut discretionary expenses like research and development, selling, advertising,

travel, maintenance etc., indulge in overproduction or time the sale of assets. They may also give price discounts or offer lenient credit terms to the customers to increase the sales. These actions are taken to avoid losses or meet/beat earnings benchmarks (Roychowdhury, 2006; Gunny, 2010; Herrmann et al., 2003; Perry and Grinaker, 1994; Baber et al., 1991; Cohen et al., 2010; Jackson and Wilcox, 2000) or to avoid violation of debt covenants (Bartov, 1993). Firms with high level of institutional ownership (Bushee, 1998), with upcoming seasoned equity offerings (Cohen and Zarowin, 2010) and which are overvalued (Badertscher, 2011) also engage in RM.

The literature on RM is limited as compared to that on AM. In fact majority of the literature on RM has emerged post survey work of Graham et al. (2005) whose findings suggest that managers prefer RM over AM. 80% of surveyed managers accepted that they take real actions such as decreasing R&D, maintenance or advertising expenditure. This technique of managing earnings is a departure from strategy of making sound economic decisions and thus, may have adverse future performance implications (Bens et al., 2002; Zhang, 2008; Leggett et al., 2009). However, detection of these real manipulative actions by auditors and regulators is tough as managers can always justify the level of spending or production. That is why RM seems to have increased post-SOX (Cohen et al., 2008).

We use the following models suggested by Gunny (2010) to measure abnormal real activities manipulation.

(a) Discretionary spending on R&D

$$RD_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (MV_t) + \beta_2 (Q_t) + \beta_3 (INT_t/A_{t-1}) + \beta_4 (RD_{t-1}/A_{t-1}) + \varepsilon_t^{R\&D}$$

(b) Discretionary spending on SG&A

$$SGA_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (MV_t) + \beta_2 (Q_t) + \beta_3 (INT_t/A_{t-1}) + \beta_4 (\Delta S_t/A_{t-1}) + \beta_5 (\Delta S_t/A_{t-1} * DD) + \varepsilon_t^{SG\&A}$$

(c) Overproduction

$$PROD_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (MV_t) + \beta_2 (Q_t) + \beta_3 (S_t/A_{t-1}) + \beta_4 (\Delta S_t/A_{t-1}) + \beta_5 (\Delta S_{t-1}/A_{t-1}) + \varepsilon_t^{Production}$$

where, RD = R&D expense, A = Total assets, MV = Log of market value of equity, Q = Tobin's Q, INT = Internal funds, SGA = Selling, General and Administrative expense, S = Sales, DD = 1 if sales decrease between $t-1$ and t , 0 otherwise, PROD = Cost of goods sold + Change in inventory.

Each of these equations is run for every industry (2-digit SIC/NIC) and year. Normal levels of R&D expense, SGA expense and production costs are estimated for every firm-year using coefficients from corresponding industry-year model. For every firm-year, abnormal levels are calculated by subtracting normal levels from actual levels.

Classification Shifting

Managers opportunistically shift expenses from operating expenses like cost of goods sold and selling, general, and administrative expenses to income-decreasing special items (McVay, 2006; Fan et al., 2010) or income-decreasing discontinued operations (Barua et al., 2010). They do so to increase their firms' core/operating income and meet or beat analysts' forecasts. Further, Fan et al. (2010) find that classification shifting (CS) is more prevalent in the fourth quarter than in first three quarters and managers use this technique more if firms have bloated balance sheets due to prior upward AM. In contrast with AM and RM, CS doesn't affect the current net income or future operating performance. Also, scrutiny of auditors and regulators is less since there is no effect on the bottom-line. (McVay, 2006).

We use the model suggested by McVay (2006) to measure expected performance achieved through CS.

$$CE_t/S_t = \beta_0 + \beta_1 (CE_{t-1}/S_{t-1}) + \beta_2 (ATO_t) + \beta_3 (Acc_{t-1}/S_t) + \beta_3 (Acc_t/S_t) + \beta_4 (\Delta S_t/S_{t-1}) + \beta_5 (Neg_ \Delta S_t) + \varepsilon_t$$

where, CE = Sales – Cost of goods sold – SGA expenses, S = Sales, ATO = Asset Turnover Ratio, Acc = Total accruals, $\Delta S_t = S_t - S_{t-1}$, $Neg_ \Delta S_t = \Delta S_t/S_{t-1}$, if $\Delta S_t/S_{t-1}$ is negative, 0 otherwise.

This equation is run for every industry (2-digit SIC/NIC) and year. Unexpected performance for a firm-year is the difference between the reported performance and calculated expected performance. McVay suggests that managers are engaging in CS if this unexpected performance is positively associated with the income-decreasing special items. Hence, we use the interaction term between financial distress and income-decreasing special items and expect a positive coefficient on it as an evidence of CS. Second proxy of CS is unexpected performance in year t , if firm has positive unexpected performance in year t and income-decreasing special items in year t .

Financial distress

Firms in financial distress face difficulties in meeting their debt and other obligations, due to poor cash flows and profitability. Existing literature on distress and earnings manipulation has used several proxies for distress. DeFond and Jiambalvo (1994), Sweeney (1994), Dichev and Skinner (2002) and Jaggi and Lee (2002) focus on violation of debt covenants. The basic assumption is that firms which violate these covenants are likely to be in financial difficulty. Dichev and Skinner (2002) discuss two limitations of using this proxy. First, violation of debt covenants may not always indicate financial distress, particularly if covenants have been set too tightly by the lenders, as in private lending agreements. Second, it is also important to examine firms which don't violate debt covenants as these firms are more likely to have managed earnings. Also, getting data on actual covenant violations from annual financial reports is cumbersome. Though, this task has become easier now with the availability of databases like Dealscan, which has been used in Dichev and Skinner (2002).

A related proxy, Debt/Equity ratio has been used by Bartov (1993). Although data availability and ease of computation works in favor of this proxy, its validity has been questioned. Dechow et al. (2010) suggest that observed association between high leverage and poor earnings quality may be due to either closeness to covenants or due to presence of other incentives like bankruptcy concerns, financial distress or need for financing. Dichev & Skinner (2002) also examine and observe the limitation of leverage as a proxy for managers' incentives under debt covenants.

DeAngelo et al. (1994) and Callen et al. (2008) focus on persistent loss occurrence. DeAngelo et al. focus on firms which reported at least three annual losses in the six-year period 1980-1985 and that reduced cash dividends. Callen et al. define persistent losses as ratio of number of loss years to total number (eight) of years surrounding year t . This proxy harps on the fact the distressed firms are likely to be poor performers and continuous losses may make the firm bankrupt.

Rosner (2003), Lara et al. (2009) and Charitou et al. (2007a, 2007b) use a sample of firms which have gone bankrupt. These studies thus, focus on extreme state of financial distress.

Another proxy for financial distress, Altman's Z-Score has been used by Zang (2012) and Badertscher (2011). Altman's Z-Score has been widely used in the bankruptcy prediction literature for a long time. Though this measure has been developed to predict bankruptcy, it presents a good alternative before the researchers who want to use a balanced measure

of distress which focuses on all the aspects of financial performance (profitability, liquidity, efficiency and leverage) and at the same time, do not wish to limit the sample size. Further, bankruptcy is an extreme form of financial distress. Distress may be a temporary situation and many firms may actually recover from it. Hence, if the setting of a research is not extreme distress, then findings using a sample of bankrupt firms will be biased (Janes, 2003).

Since the focus of this paper is on the examination of choice of earnings management strategies in distressed firms (temporary or severe), we use three proxies for assessing financial distress. Our first proxy for financial distress is a modified version of MMH firm-year criteria (McKeown, Motchler, and Hopwood, 1991), which has also been used in Rosner (2003). Thus, a firm is financially distressed in year t if it has any one of these financial characteristics: (a) negative working capital in year t (Current Assets–Current Liabilities), (b) a loss from operations in any of the three years prior to year t (Operating Income/Lagged Assets), (3) a retained earnings deficit in year $t-3$, or (4) a bottom-line loss (Income before Extraordinary Items/Lagged Assets) in any of the last three years.

Second proxy is an accounting ratios based bankruptcy model of Altman (1968, 2000), which classifies a firm as distressed/un-distressed based on its liquidity, age, core profitability, solvency and efficiency. Altman discusses that this model has got 80-90% prediction accuracy. A firm-year is classified as distressed if its Z-Score is less than 1.81 in year $t-1$. Z-Score is calculated as follows:

$$Z = 1.2 * (WC/TA) + 1.4 * (RE/TA) + 3.3 * (EBIT/TA) + 0.6 * (MVE/TL) + 1.0 * (S/TA)$$

where, Z = Z-Score, WC = Working Capital, TA = Total Assets; RE = Retained Earnings, $EBIT$ = Earnings before Interest and Taxes, MVE = Market Value of Equity, TL = Total Liabilities and S = Sales.

Third and final proxy is whether firm has incurred operating losses in previous years. We define a firm to be distressed if it has got negative operating income after depreciation (oiadp) in last 2 consecutive years. Distress become severe if such losses have been continuing for more than 2 years.

Intended Contribution to Existing Literature

Financial distress represents a state where firms are facing financial difficulties with respect to poor cash flows and profitability. Examination of managers' actions during this phase merits attention as managers have to trade-off between firm's long-run survival and other short-term incentives like getting financing, avoiding debt covenant violations or own job security. Prior studies have focused on early stages of distress like debt covenant violations or extreme state of distress, bankruptcy. We take a middle path since distressed firms can actually recover from distress, and examine earnings management behavior amongst the firms currently facing financial difficulties relating to liquidity, profitability, efficiency and solvency. To capture these problems, we use Altman's Z-Score. This score which has been developed to predict bankruptcy has got a good bankruptcy predictive power, allows us to capture financial difficulties and enables us to have a good sample size.

The literature on earnings management in distressed firms is silent about the use of real activities like cutting discretionary research and development expenditure, cutting selling, general and administrative expenditure, and overproduction to manipulate earnings. Similarly, use of CS in income statement to increase operating earnings, in distressed firms has also not been examined. We examine choice of these strategies in financially distressed firms and also, whether these choices differ when distress is serious.

Negative consequences of accruals management have been documented in the literature (Sloan, 1996; Janes, 2003). Real activities manipulation strategies discussed above are also likely to adversely impact the future operating performance of the firm as these are sub-optimal decisions (Zhang, 2008; Leggett et al., 2009). Conversely, Gunny (2010) and Taylor and Xu (2010) observe that these are sound economic decisions and lead to an improvement in the future performance. Distressed firms' decisions to change spending on discretionary expenses like R&D and SGA or to change levels of production may be driven by either survival or opportunistic motives. Thus, effect of choice of these strategies on future operating performance of distressed firms is an open question and we propose to answer this question.

Research Questions and Hypotheses

Q1. What is the role of financial distress in the choice of alternative earnings management strategies?

As discussed earlier, distressed firms have incentives to manage earnings. Since managers can choose from a portfolio of available earnings management strategies, Jiambalvo (1996), Fields et al. (2001) and Dechow et al. (2010) advise examination of multiple earnings management strategies at a time. Such an examination shows whether managers' choice of earnings management strategy differs from incentives to incentive. Most of the papers on this subject have focused on accruals-based earnings management, while only few papers have examined earnings management through manipulation of real activities like cutting discretionary expenses viz. R&D, SGA expenses and producing more than what is necessary. None of the studies discuss association of CS in income statement and financial distress.

AM

Substantial literature exists on use of AM in financially distressed firms. This literature has focused on firms which have violated debt covenants (DeFond and Jiambalvo, 1994; Sweeney, 1994; Dichev and Skinner, 2002; Jaggi and Lee, 2002), have gone bankrupt (Rosner, 2003; Charitou et al., 2007a and 2007b; Lara et al., 2009), have suffered persistent loss (DeAngelo et al., 1994; Callen et al., 2008) or are involved in renegotiating their debt (Saleh and Ahmed, 2005). Recently, Zang (2012) has tested the association of distress (proxy being Altman's Z-Score) with AM.

DeFond and Jiambalvo (1994) and Sweeney (1994) find that in the years before debt covenant violations occur, firms make income-increasing accounting choices in order to avoid violations. However, DeFond and Jiambalvo don't observe this opportunistic behavior in the year of violation. DeAngelo et al. (1994) do not find any significant

difference between the accruals behavior of troubled firms, with and without binding debt covenants prior to dividend reduction. Later, such firms exhibit negative accruals possibly to acknowledge their problems and to get better terms from lenders when renegotiating.

Such behavior of accruals has also been observed in Saleh and Ahmed (2005). Jaggi and Lee (2002) improved upon the above-mentioned literature in two ways. First, they link earnings management with the severity of financial distress – debt restructuring or renegotiation and on granting of waivers by creditors in case of violations of debt covenants. Second, they use cross-sectional and time-series models of discretionary accruals to infer earnings management. Their findings suggest that if distress is temporary, managers manage earnings opportunistically. Such improved performance can help them in obtaining waivers from creditors despite covenant violations. However, if the distress is severe in nature and managers are not able to obtain the waivers, they will report conservative earnings to help them in renegotiating debt or obtaining refinancing.

This observed conservative behavior is consistent with that of DeAngelo et al. (1994). Dichev and Skinner (2002) examine private lending agreements in a large sample, 2810 US firms. They use a different approach and observe an unusually small number of loan/quarters with financial measures just below covenant thresholds and an unusually large number of loan/quarters with financial measures at or just above covenant thresholds.

Rosner (2003) was the first to examine a sample of firms which had gone bankrupt. Her primary finding is that ex-post bankrupt firms which ex-ante, do not appear to be distressed have greater income-increasing accruals. Charitou et al. (2007a) also find that bankrupt firms initially engage in income-increasing AM. But one year before the bankruptcy-filing, these firms exercise downward AM. Charitou et al. (2007b) observe that this downward AM is due to new management's big-bath choice, conservative reporting by firms due to qualified audit opinions and lower institutional ownership.

Callen et al. (2008) focus on firms having persistent losses. They observe that such firms have high investment in receivables and thus, are manipulating revenues. This finding is in consonance with survey evidence from Graham et al. (2005) who find that managers of unprofitable firms consider revenues as a more important financial metric for outsiders, as compared to managers of profitable firms.

The majority of this literature has observed income-increasing AM in troubled firms prior to debt covenant violations, before bankruptcy or when distress is temporary. However, firms become conservative when these actually end-up violating debt covenants, go bankrupt or become severely distressed.

Both AM and RM

This sub-section contains discussion of those papers which focus on both accruals and real activities manipulation.

Lara et al. (2009) focus on bankruptcy event and examine 268 failed firms in UK. They find that in the four years prior to failure, such firms engage in upwards AM. These firms also engage in real sales manipulation if accruals management is not possible. Zang (2012) and Badertscher (2011) focus on costs, benefits and incentives of AM and RM and use Altman's Z-Score as a proxy for distress-related incentive. Zang posits and finds that firms in distress use more of AM and less of RM. She suggests that RM leads to sub-optimal decisions like cutting on discretionary expenditure and overproduction which may have adverse future performance implications. In contrast to Zang's findings, Badertscher finds distress to be positively associated with RM and, a sum of RM and AM - a proxy of total amount of earnings management. He doesn't test the association between distress and AM.

Only one paper has focused solely on a real strategy for managing earnings. Bartov (1993) tests the association of leverage with a particular type of RM – opportunistic timing of the sale of fixed assets and investments. He finds that high leverage is associated with more income from sale of assets, controlling for the presence of other incentives before managers like bonus and income smoothing.

It is evident from this literature that managers of distressed firms engage in both AM and RM and these may be used as substitutes. However, there is limited evidence (Lara et al., 2009; Bartov, 1993) on use of specific RM strategies – sales manipulation through excessive discounts and lenient credit terms, R&D or SGA under-spending, overproduction and timing the sales of assets.

Hypotheses

We examine which of the earnings management strategies (AM, RM and CS), do these firms use. Whether these firms use all the available strategies or few of these? If distressed firms use real actions, whether it involves cutting R&D expenditure, cutting SGA expenditure, overproduction or all of these?^{iv} Further, do such firms also engage in CS?

Cash-constrained firms are likely to cut discretionary spending on R&D and SGA. Though many of the distressed firms have less cash and may have incentives to cut such spending to increase short-term earnings and cash flows, such a step may also lead to a decline in future operating performance of the firm (Bens et al., 2002; Zhang, 2008; Leggett et al., 2009). But managers may think of distress as a temporary phase and may worry about job security. We expect that they will cut R&D/SGA expenditure to overcome temporary problems. If they are of the view that such short-sighted actions could actually further worsen the problem, they might cut comparatively less important SGA expenses like travel, maintenance etc.

Managers of unprofitable firms consider pro-forma earnings^v as more important financial metrics for reporting purpose, as compared to the earnings (Graham et al., 2005). If managers of distressed firms really find pro-forma earnings important, they are more likely to resort to tactics which lead to an increase in the operating or core earnings. As discussed earlier, this is possible through shifting of expenses from operating expenses

category to special items category. Francis et al. (1996) find a positive association between decline in operating earnings and extent of write-offs through restructuring costs. McVay (2006) suggests that special items like restructuring costs are more susceptible to CS. Taken together; these studies suggest a positive association between decline in performance and CS. However, there is no direct evidence on the use of this EM strategy in distressed firms. We expect that distressed firms have incentives to use CS as an EM strategy and use it.

Based on this discussion, we hypothesize:

Financial distress increases the level of earnings management via cash-saving RM and CS.

As discussed earlier, temporary financial troubles encourage use of income-increasing AM. However, managers show conservative behavior i.e. income-decreasing AM when distress is severe. Our sample of distressed firms comprises of firms in several stages of distress and thus, we do not make any directional prediction about AM in these firms.

In contrast to discretionary spending where managers trade-off between current cash flow/earnings gains and future negative performance, overproduction leads to an increase in current earnings at the cost of further worsening of cash position. Graham et al. (2005) and Lee (2012) also discuss about importance of cash flow indicator for unprofitable and distressed firms. Since, managers have to trade-off between these two competing

objectives (increasing earnings vs. decreasing cash flows), we do not make any directional prediction about RM through overproduction.

Hence, our second hypothesis is:

There is no significant association between financial distress and level of earnings management via AM and RM through overproduction.

Multivariate model to test for association between distress and EM strategies:

$$EM_t = f(\text{Distress}_{t-1}, \text{Incentives}_{t-1}, \text{Corporate Governance}_t, \text{Controls}_{t-1})$$

where, Distress = 1 if Altman's Z-Score < 1.81, otherwise 0.

In subsequent test, we replace *Distress* with its components – profitability (current and cumulative), efficiency, solvency and liquidity to ascertain the main motivation behind the use of any EM strategy.

Q2. How does the severity of financial distress impact the choice of alternative earnings management strategies?

An issue which remains unresolved in previous question is seriousness of distress. What happens if financial distress faced by the firm is serious? Does use of EM strategies differ in this circumstance? We try to answer this question in this section.

Existing literature suggests that firms become conservative in managing earnings through AM, when these actually end-up violating debt covenants, go bankrupt or are in process of debt renegotiation. There is no existing evidence on use of RM and CS in extreme distress situations.

Firms involved in debt restructuring and renegotiations have incentives to reduce earnings using accruals to get better terms from lenders (DeAngelo et al., 1994; Jaggi and Lee, 2002). This conservative behavior in bankrupt firms and in debt covenant violation years is due to 'big bath' choices of new management and qualified audit opinions (Charitou et al., 2007b; DeFond and Jiambalvo, 1994). Consistent with these findings, we expect income-decreasing AM in firms in extreme distress.

It has been discussed earlier that managers are likely to cut expenditure on R&D/SGA when distress is temporary. We expect them to continue to do so in really tough times. Continuous distress leads to a further dip in cash-flows and profitability, which may necessitate further cutting of discretionary expenses. Due to very poor liquidity, we do not expect them to use overproduction. In fact, firms may cut back on production due to steep decline in sales and cash flows.

Since, CS only deals with presentation of the items in the income statement and doesn't affect the liquidity, it costs least amongst all the strategies and managers may continue to engage in it. Overall, we hypothesize:

Severely distressed firms engage in income-decreasing earnings management via AM and overproduction, and income-increasing earnings management via cash-saving RM and CS.

Our measure for severity is duration of distress. If distress continues for a long period of time, it becomes serious. To test this hypothesis, we use the following models:

$$EM_t = f(\text{Distress}_i(t-1), \text{Incentives}_{t-1}, \text{Corporate Governance}_t, \text{Controls}_{t-1})$$

where, $i = 1, 2, 3, 4$ or 5 and $\text{Distress}_1 = 1$ if firm is distressed in year $t-1$ but not in years $t-2$ to $t-5$, otherwise 0 , $\text{Distress}_2 = 1$ if firm is distressed in years $t-1$ and $t-2$ but not in years $t-2$ to $t-5$, otherwise 0 , and so on.

Again, in subsequent test, we replace *Distress* with its components – profitability (current and cumulative), efficiency, solvency and liquidity to ascertain the main motivation behind the use of any EM strategy.

Q3. Does the choice of earnings management strategies impact the future performance of financially distressed firms?

Distressed firms may use any or all of the discussed earnings management strategies – accruals management, cutting R&D expenses, cutting SGA expenses, overproduction or CS. Except CS, other strategies are likely to impact future performance.

Though accruals management may help in reporting good performance in year of such management, accruals reverse and hence, any opportunistic estimate made this year is likely to cause decline in future earnings. e.g. Under-expensing of bad debts this year may ultimately warrant a write-off of receivables in future. Sloan (1996) finds that earnings consisting more of accruals are less persistent than that consisting more of cash flows. Janes (2003) also finds that financial distress is more likely in firms with extreme accruals. Consistent with these findings, we expect future performance of firms with high discretionary accruals to decline, hypothesis being:

Future performance is negatively associated with the current level of discretionary accruals.

Impact of real activities manipulation on future performance is an open question. Cutting expenditure on R&D, selling, hiring, maintenance etc. can have adverse effect on future firm performance. Bens et al. (2002), Zhang (2008) and Leggett et al. (2009) find that future operating performance of firms engaging in RM declines as these are sub-optimal decisions. On the other hand, Gunny (2010) and Taylor and Xu (2010) observe that performance improves, suggesting that RM is a sound economic decision. None of these studies tests the impact of specific RM technique on future performance and these studies do not focus specifically on distressed firms and their recovery. However, the literature on turnaround strategies (Sudarsanam and Lai, 2001; Loui and Smith, 2006) suggests that

operational restructuring through cost cutting doesn't help distressed firms in recovering from distress. Considering the mixed evidence, we hypothesize:

There is no significant association between the use of RM strategies and future performance.

To capture the future operating performance, we focus on two aspects: (a) change in Return on Assets (ROA) and (b) change in Z-Score.

Following multivariate model is run on distressed firms.

$$\Delta\text{Perf}_t = f(\text{AM}_t, \text{R\&D_RM}_t, \text{SGA_RM}_t, \text{PROD_RM}_t, \text{Size}_t, \text{MTB}_t)$$

ΔPerf represents change in ROA or Z-Score from $t-1$ to t . To capture long-run performance, ΔPerf is measured between $t-1$ to $t+1$ or $t+2$.

Positive (Negative) coefficients on EM variables will suggest that earnings manipulation leads to a good (poor) operating performance and such EM decisions are sound (unsound or opportunistic) economic decisions. This analysis will also help in answering a very important question – Do distressed firms remain distressed in future after engaging in EM or recover?

Sample

Data has been obtained from Compustat and Execucomp. Our full sample comprises of 5909 US non-financial firm-years from 1993 to 2010. All non-indicator financial variables have been winsorized at top and bottom 1 percent to eliminate influence of extreme observations. Regressions are run on pooled data using year fixed effects.

Results

Table I

| Variable | AM | | R&D | | SGA | | Prod | | UE_CE | |
|--------------|---------------|---------|---------------|---------|---------------|---------|---------------|---------|--------------|---------|
| | Estimate | p-value | Estimate | p-value | Estimate | p-value | Estimate | p-value | Estimate | p-value |
| Intercept | 0.370 | 0.213 | -0.034 | 0.009 | -0.254 | 0.000 | -0.294 | 0.000 | 0.011 | 0.938 |
| distress1 | 0.045 | 0.880 | 0.007 | 0.394 | 0.060 | 0.017 | 0.023 | 0.501 | 0.275 | 0.191 |
| size | -0.038 | 0.456 | 0.008 | 0.000 | 0.052 | 0.000 | 0.037 | 0.000 | -0.009 | 0.637 |
| age | -0.001 | 0.778 | 0.000 | 0.056 | 0.000 | 0.815 | 0.001 | 0.123 | 0.002 | 0.258 |
| mtb | -0.022 | 0.002 | -0.001 | 0.090 | -0.004 | 0.003 | -0.006 | 0.000 | -0.002 | 0.448 |
| bloat | 0.018 | 0.247 | 0.001 | 0.093 | 0.013 | 0.000 | 0.000 | 0.969 | 0.017 | 0.335 |
| bon | -0.235 | 0.352 | -0.013 | 0.144 | -0.065 | 0.024 | 0.028 | 0.589 | -0.023 | 0.819 |
| owner | -0.007 | 0.082 | 0.000 | 0.321 | 0.000 | 0.539 | 0.003 | 0.000 | 0.002 | 0.484 |
| ex_option | -0.001 | 0.800 | 0.000 | 0.216 | 0.000 | 0.923 | 0.000 | 0.843 | 0.002 | 0.149 |
| tenure | 0.011 | 0.019 | 0.000 | 0.181 | -0.001 | 0.212 | -0.001 | 0.542 | -0.003 | 0.220 |
| po | 0.085 | 0.386 | -0.004 | 0.299 | 0.011 | 0.203 | 0.019 | 0.271 | 0.014 | 0.718 |
| mshare | 0.068 | 0.821 | -0.026 | 0.282 | -0.189 | 0.000 | 0.062 | 0.212 | 0.164 | 0.182 |
| ceo_chair | -0.017 | 0.873 | 0.001 | 0.851 | 0.019 | 0.042 | -0.016 | 0.366 | 0.003 | 0.932 |
| bigfour | -0.077 | 0.482 | -0.003 | 0.538 | 0.009 | 0.471 | 0.005 | 0.729 | 0.011 | 0.848 |
| si | | | | | | | | | 0.602 | 0.015 |
| distress1_si | | | | | | | | | -0.698 | 0.698 |
| Adj_RSq | 0.01 | | 0.015 | | 0.054 | | 0.037 | | 0.018 | |
| Obs | 5909 | | 5909 | | 5909 | | 5909 | | 5909 | |

Table 1 presents the results of regressions of EM strategies on financial distress and other control variables.

H1: *Financial distress increases the level of earnings management via cash-saving RM and CS.*

We find some evidence in favor of use of cash-saving RM (SGA expenses) in distressed firms. Specifically, coefficient on *distress1* is positive and significant indicating that managers of distressed firms cut spending on SGA to improve cash-flows and profitability. However, distressed firms do not seem to engage in CS. Although, there is evidence of CS in the pooled sample due to significant positive association between unexpected core earnings and income-decreasing special items (*si*), this CS is not associated with distress as coefficient on interaction term between income-decreasing special items and distress (*distress1_si*) is insignificant.

H2: *There is no significant association between financial distress and level of earnings management via AM and RM through overproduction.*

As expected, we do not find any evidence of AM, and RM through overproduction in distressed firms. Coefficients on *distress1* are insignificant in both the regressions.

Consistent with previous literature (Zang, 2012; Gunny, 2010), coefficients on *size* in RM-related equations are positive and significant indicating that big firms indulge in real activities manipulation more. Small firms exhibit more AM due to internal control deficiencies (Doyle et al., 2007) and more accrual estimation errors (Dechow and Dichev, 2002). However, we do not find any such evidence. Coefficient on *age* is significant and

positive only in R&D equation indicating R&D cut in older firms. This may be due to older firms' limitation in using more AM due to existing balance sheet bloat. The existing literature (Gul et al., 2009; Chen, 2009) uses firm-age to proxy for firm's position in the life-cycle, young firms being in growth stage.

We use *mtb* to proxy for firm's growth. We find that growth firms cut R&D and SGA expenses, overproduce and do less AM. These findings are inconsistent with that of Chen (2009) who finds that growth firms use AM to inflate earnings, but spend more on R&D keeping in view future growth potential. Also, growth firms spend more on SGA (Gunny 2010) contrary to our findings. Prior AM (*bloat*) restricts firms' flexibility in use of more AM (Barton and Simko 2002) and managers of firms with high balance sheet bloat, thus substitute RM for AM (Zang, 2012; Badertscher, 2011). Consistent with these, we find significant and positive coefficients on R&D and SGA equations indicating that managers cut R&D and SGA expenses to report increased earnings when their ability to use AM is restricted.

Prior literature suggests positive association of earnings and stock based compensation with AM and RM (Healy, 1985; Bergstresser and Philippon, 2006; Cheng and Warfield, 2005; Cohen et al., 2008). Except positive coefficient on *owner* in Prod equation, rest of the results on executive compensation related variables (*bon*, *owner* and *ex_option*) are not as expected. Long-tenured CEOs use income-increasing AM as they accumulate managerial power over time (Ghosh and Moon, 2005). We find similar evidence with coefficient on *tenure* being positive and significant in AM equation.

Coefficients on *po* are insignificant in all equations suggesting incentive to raise external financing is not associated with managers' EM strategies. This finding is unexpected as Rangan (1998), Teoh et al. (1998), Shivkumar (2000) and Cohen and Zarowin (2010) find this incentive to be associated with the use of AM and RM. Zang (2012) posits and finds that firms not having market leadership position cannot afford to engage in RM and use AM instead. Conversely, we find negative coefficient on SGA RM.

Firms with CEO also as chairperson of the board of directors engage in accounting frauds and restate their earnings (Dechow et al., 1996; Farber, 2005; Efendi et al., 2007). There is no existing evidence on association of CEO duality with RM. Although we don't find *ceo_chair* to be associated with AM, we do find that such duality is associated with SGA RM. Thus, CEOs also serving as chairperson of the board seem to under-spend on SGA expenses. Presence of a big8 auditor leads to a decline in AM and increase in RM (Zang, 2012; Cohen and Zarowin, 2010). We use a proxy for presence of *bigfour* auditor and do not find evidence of its association with AM or RM. CS is not associated with any of the control variables.

Table II

| Variable | AM | | R&D | | SGA | | Prod | | UE_CE | |
|--------------|---------------|---------|---------------|---------|---------------|---------|---------------|---------|--------------|---------|
| | Estimate | p-value | Estimate | p-value | Estimate | p-value | Estimate | p-value | Estimate | p-value |
| Intercept | 0.344 | 0.237 | -0.035 | 0.007 | -0.254 | 0.000 | -0.284 | 0.000 | 0.009 | 0.949 |
| distress1 | 0.066 | 0.828 | 0.007 | 0.374 | 0.061 | 0.016 | 0.018 | 0.605 | 0.281 | 0.181 |
| distress2 | 0.441 | 0.278 | -0.015 | 0.258 | 0.067 | 0.054 | 0.057 | 0.530 | -0.013 | 0.954 |
| distress3 | -0.304 | 0.732 | 0.025 | 0.170 | 0.087 | 0.234 | 0.042 | 0.339 | 0.227 | 0.077 |
| distress4 | 0.472 | 0.235 | 0.012 | 0.550 | -0.110 | 0.141 | -0.511 | 0.097 | -0.097 | 0.583 |
| distress5 | 1.592 | 0.014 | 0.031 | 0.137 | -0.113 | 0.077 | -0.009 | 0.942 | 0.344 | 0.272 |
| size | -0.036 | 0.487 | 0.008 | 0.000 | 0.051 | 0.000 | 0.036 | 0.000 | -0.010 | 0.584 |
| age | -0.001 | 0.739 | 0.000 | 0.052 | 0.000 | 0.783 | 0.001 | 0.127 | 0.002 | 0.226 |
| mtb | -0.021 | 0.002 | -0.001 | 0.089 | -0.004 | 0.003 | -0.006 | 0.000 | -0.002 | 0.544 |
| bloat | 0.019 | 0.235 | 0.001 | 0.089 | 0.013 | 0.000 | 0.000 | 0.911 | 0.020 | 0.247 |
| bon | -0.210 | 0.412 | -0.012 | 0.151 | -0.063 | 0.029 | 0.023 | 0.643 | 0.002 | 0.982 |
| owner | -0.007 | 0.081 | 0.000 | 0.311 | 0.000 | 0.540 | 0.003 | 0.000 | 0.001 | 0.561 |
| ex_option | -0.001 | 0.714 | 0.000 | 0.215 | 0.000 | 0.900 | 0.000 | 0.794 | 0.002 | 0.209 |
| tenure | 0.012 | 0.012 | 0.000 | 0.162 | -0.001 | 0.212 | -0.001 | 0.453 | -0.002 | 0.294 |
| po | 0.091 | 0.351 | -0.004 | 0.316 | 0.011 | 0.203 | 0.018 | 0.287 | 0.017 | 0.669 |
| mshare | 0.054 | 0.859 | -0.027 | 0.269 | -0.188 | 0.000 | 0.069 | 0.170 | 0.164 | 0.186 |
| ceo_chair | -0.019 | 0.854 | 0.001 | 0.860 | 0.020 | 0.039 | -0.016 | 0.362 | 0.001 | 0.985 |
| bigfour | -0.071 | 0.503 | -0.003 | 0.585 | 0.009 | 0.486 | 0.002 | 0.895 | 0.013 | 0.827 |
| si | | | | | | | | | 0.545 | 0.026 |
| distress1_si | | | | | | | | | -0.632 | 0.725 |
| distress2_si | | | | | | | | | 4.418 | 0.015 |
| distress3_si | | | | | | | | | 2.148 | 0.056 |
| distress4_si | | | | | | | | | 4.940 | 0.234 |
| distress5_si | | | | | | | | | -15.218 | 0.130 |
| Adj_RSq | 0.012 | | 0.015 | | 0.056 | | 0.045 | | 0.023 | |
| Obs | 5909 | | 5909 | | 5909 | | 5909 | | 5909 | |

H3: Severely distressed firms engage in income-decreasing earnings management via AM and overproduction, and income-increasing earnings management via cash-saving RM and CS.

Table 2 presents the results of tests related to hypothesis 3. Surprisingly, we observe that when severity of financial distress increases, managers indulge in income-increasing AM (*distress5*). As expected, they cut production (*distress4*) and SGA expenses (*distress2*) which may be a rational response to declining sales and resulting tough circumstances. However, managers do not cut SGA expenses in severe distress (*distress3* to *distress5*). In fact they spend more in extreme distress situation (*distress5*), which may be an attempt to recover through revenue generation. We also find evidence of CS in severely distressed firms (*distress2_si* and *distress3_si*). Throughout, we do not find any evidence on association of R&D spending and distress.

H4: Future performance is negatively associated with the current level of discretionary accruals.

H5: There is no significant association between the use of RM strategies and future performance.

Table III

| Distress1 | z_perf_1 | | z_perf_2 | | z_perf_3 | |
|--------------|---------------|---------|--------------|---------|---------------|---------|
| | Estimate | P-value | Estimate | P-value | Estimate | P-value |
| Intercept | -3.530 | 0.061 | -1.360 | 0.597 | -5.717 | 0.101 |
| res_jones_ta | -0.075 | 0.739 | -0.296 | 0.725 | -0.906 | 0.530 |
| g_r | -2.724 | 0.488 | 6.484 | 0.118 | 19.001 | 0.019 |
| g_s | -2.889 | 0.029 | 1.927 | 0.529 | 0.002 | 1.000 |
| g_prod | 1.428 | 0.339 | 0.272 | 0.899 | 4.053 | 0.378 |
| size | 0.720 | 0.085 | 0.081 | 0.835 | 0.911 | 0.154 |
| mtb | 0.167 | 0.045 | 0.481 | 0.029 | 0.445 | 0.088 |
| Adj_RSq | 0.039 | | 0.067 | | 0.037 | |
| Obs | 746 | | 746 | | 746 | |

Table IV

| Distress2 | z_perf_1 | | z_perf_2 | | z_perf_3 | |
|--------------|---------------|---------|----------|---------|----------|---------|
| | Estimate | P-value | Estimate | P-value | Estimate | P-value |
| Intercept | 4.104 | 0.421 | 1.980 | 0.699 | 0.099 | 0.988 |
| res_jones_ta | -0.515 | 0.427 | 0.517 | 0.553 | 1.377 | 0.146 |
| g_r | 8.339 | 0.331 | 9.862 | 0.371 | 1.632 | 0.882 |
| g_s | -5.150 | 0.053 | -2.156 | 0.501 | -3.913 | 0.272 |
| g_prod | -0.917 | 0.391 | -0.915 | 0.508 | 1.358 | 0.476 |
| size | -0.325 | 0.753 | -0.386 | 0.741 | 1.453 | 0.228 |
| mtb | 0.366 | 0.051 | 0.390 | 0.121 | 0.374 | 0.152 |
| Adj_RSq | 0.028 | | -0.004 | | 0.053 | |
| Obs | 538 | | 538 | | 538 | |

Table V

| Distress5 | z_perf_1 | | z_perf_2 | | z_perf_3 | |
|--------------|---------------|---------|----------|---------|----------|---------|
| | Estimate | P-value | Estimate | P-value | Estimate | P-value |
| Intercept | -8.651 | 0.269 | -1.504 | 0.902 | 2.151 | 0.849 |
| res_jones_ta | 0.851 | 0.473 | 1.914 | 0.183 | 1.444 | 0.317 |
| g_r | -13.884 | 0.104 | 6.124 | 0.533 | 27.105 | 0.211 |
| g_s | -9.291 | 0.091 | -6.392 | 0.277 | -8.290 | 0.185 |
| g_prod | -1.095 | 0.611 | -3.365 | 0.218 | 0.124 | 0.968 |
| size | 2.043 | 0.175 | 0.684 | 0.767 | 0.058 | 0.978 |
| mtb | 0.066 | 0.589 | -0.222 | 0.479 | -0.023 | 0.944 |
| Adj_RSq | 0.112 | | 0.053 | | 0.079 | |
| Obs | 436 | | 436 | | 436 | |

Tables 3, 4 and 5 present results of regressions on change in Z-Score ($t-1$ to t , $t-1$ to $t+1$ and $t-1$ to $t+2$). As observed earlier, firms cut spending on SGA if these are distressed for one year and two consecutive years. We also observe cut in production, income-increasing AM and more spending on SGA in severe distress. Coefficients on g_s in tables 3, 4 and 5 suggest that any cut in SGA expense in such firms increases the distress. These results suggest that less spending on SGA is opportunistic in initial stages of

distress. Since firms spend more in extreme distress, that actually augurs well for these firms in recovering from distress. In un-tabulated results, underproduction and income-increasing AM are not associated with change in Z-Score. Further, any of the above-mentioned actions are not associated with change in ROA in future.

Conclusion

We examine whether financial distress and its severity have a role to play in managers' decisions with respect to the choice of earnings management strategies – accruals earnings management, real earnings management and classification shifting. We find that the firms in initial stages of distress cut spending on selling, general and administrative expenses, and engage in classification shifting to increase profitability and liquidity. When distress becomes severe, firms cut-back on production, engage in income-increasing accruals management, and increase their spending on selling, general and administrative expenses. Initial under-spending on selling, general and administrative expenses is opportunistic with an intention to show improved performance. In extreme distress, increase on such spending is a sound economic decision. Our findings provide insights into how managers of distressed firms trade-off between liquidity, profitability and solvency in both short-run and long-run using different earnings management strategies.

References

- Accountingweb.com. 2008. Fraud and bankruptcy go hand in hand (<http://www.accountingweb.com/item/106540>).
- Altman, E. I. (1968), "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", *The Journal of Finance*, Vol. 23 No. 4, pp. 589-609.
- Altman, E. I. (2000), "Predicting Financial Distress of Companies: Revisiting the Z-Score and ZETA Models", Working Paper, SSRN.
- Athanasakou, V., Strong, N. C. and Walker, M. (2011), "The Market Reward for Achieving Analyst Earnings Expectations: Does Managing Expectations or Earnings Matter?", *Journal of Business Finance & Accounting*, Vol. 38 No. 1/2, pp. 58-94.
- Baber, W., Fairfield, P. and Haggard, J. (1991), "The effect of concern about reported income on discretionary spending decisions: The case of research and development", *The Accounting Review*, Vol 66 No. 4, pp. 818-829.
- Badertscher, B. (2011), "Overvaluation and the choice of alternative earnings management mechanisms", *The Accounting Review*, Vol. 86 No. 5, pp. 1491-1518.
- Barton, J. and Simko, P. J. (2002), "The Balance Sheet as an Earnings Management Constraint", *The Accounting Review*, Vol. 77 No. Supplement, pp. 1-27.
- Bartov, E. (1993), "The timing of assets sales and earnings manipulation", *The Accounting Review*, Vol. 68 No. 4, pp. 840-855.
- Barua, A., Lin, S. and Sbaraglia, A. (2010), "Earnings management using discontinued operations. *The Accounting Review*, Vol. 85 No. 5, pp. 1485-1509.
- Bens, D. A., Nagar, V. and Wong, M. H. F. (2002), "Real investment implications of employee stock option exercises", *Journal of Accounting Research*, Vol. 40 No. 2, pp. 359-393.
- Bergstresser, D. and Philippon, T. (2006), "CEO incentives and earnings management", *Journal of Financial Economics*, Vol. 80, pp. 511-529.
- Brown, L. and Pinello, A. (2007), "To what extent does the financial reporting process curb earnings surprise games?", *Journal of Accounting Research*, Vol. 45 No. 5, pp. 1-35.

- Burgstahler, D., Jiambalvo, J. and Shevlin, T. (2002), "Do stock prices fully reflect the implications of special items for future earnings?", *Journal of Accounting Research*, Vol. 40 No. 3, pp. 585-612.
- Bushee, B. (1998), "The influence of institutional investors on myopic R&D investment behavior", *The Accounting Review*, Vol. 73 No. 3, pp. 305-333.
- Callen J. L., Robb, S. W. G. and Segal, D. (2008), "Revenue Manipulation and Restatements by Loss Firms", *The Accounting Review*, Vol. 27 No. 2, pp. 1-29.
- Charitou, A., Lambertides, N. and Trigeorgis, L. (2007a), "Managerial discretion in distressed firms", *The British Accounting Review*", Vol. 39, pp. 323-346.
- Charitou, A., Lambertides, N. and Trigeorgis, L. (2007b), "Earnings behaviour of financially distressed firms: The role of institutional ownership", *Abacus* Vol. 43 No. 3, pp. 271-296.
- Chen, J. Z. (2009), "The choice between real and accounting earnings management", Working paper, University of Houston.
- Cheng, Q. and Warfield, T. (2005), "Equity incentives and earnings management", *The Accounting Review*", Vol. 80, pp. 441-476.
- Cohen, D., Dey, A. and Lys, T. (2008), "Real and accrual-based earnings management in the pre- and post-Sarbanes Oxley period", *The Accounting Review*, Vol. 83 No. 3, pp. 757-787.
- Cohen, D. and Zarowin, P. (2010), "Accrual-based and real earnings management activities around seasoned equity offerings", *Journal of Accounting and Economics*, Vol. 50 No. 1, pp. 2-19.
- Cohen, D., Mashruwala, R. and Zach, T. (2010), "The use of advertising activities to meet earnings benchmarks: Evidence from monthly data", *Review of Accounting Studies*, Vol. 15 No. 4, pp. 808-832.
- DeAngelo, H., DeAngelo, L. and Skinner, D. J. (1994), "Accounting choice in troubled companies", *Journal of Accounting and Economics*, Vol. 17 No. 1/2, pp. 113-143.
- Dechow, P. M. and Schrand, C. (2004), *Earnings Quality*, The Research Foundation of CFA Institute.
- Dechow, P. M., Sloan, R. G. and Sweeney, A. P. (1995), "Detecting earnings management", *The Accounting Review*, Vol. 70 No. 2, pp. 193-225.
- Dechow, P. M., Sloan, R. G. and Sweeney, A. P. (1996), "Causes and consequences of earnings manipulation: an analysis of firms subject to

enforcement actions by the SEC”, *Contemporary Accounting Research*, Vol. 13, pp. 1-36.

Dechow, P. M., Ge, W. and Schrand, C. (2010), “Understanding Earnings Quality: A Review of the Proxies, their Determinants and their Consequences”, *Journal of Accounting and Economics*, Vol. 50 No. 2-3, pp. 344-401.

Dechow, P. M. and Dichev, I. (2002), “The quality of accruals and earnings: The role of accrual estimation errors”, *The Accounting Review* Vol. 77 No. Supplement, pp. 35-69.

Dechow, P. M., Ge, W., Larson, C. R. and Sloan, R. G. (2011), “Predicting material accounting misstatements”, *Contemporary Accounting Research*, Vol. 28 No. 1, pp. 17-82.

DeFond, M. L. and Jiambalvo, J. (1994), “Debt Covenant Violation and Manipulation of Accruals”, *Journal of Accounting and Economics*, Vol. 17 No. 1-2, pp. 145-76.

Deloitte Forensic Center. 2008. Ten things about bankruptcy and fraud. (http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_dfc_tenthingsaboutbankruptcy_24112008.pdf).

Dichev, I. D. and Skinner, D. J. (2002), “Large-sample Evidence on the Debt Covenant Hypothesis”, *Journal of Accounting Research*, Vol. 40 No. 4, pp. 1091-1123.

Doyle, J., Ge, W. and McVay, S. (2007), “Accruals quality and internal control over financial reporting”, *The Accounting Review*, Vol. 82, pp. 1141-1170.

Efendi, J., Srivastava, A. and Swanson, E. (2007), “Why do corporate managers misstate financial statements? The role of option compensation and other factors”, *Journal of Financial Economics*, Vol. 85, pp. 667-708.

Erickson M., Hanlon, M. and Maydew, E. L. (2006), “Is there a link between executive equity incentives and accounting fraud?”, *Journal of Accounting Research*, Vol. 44 No. 1, pp. 113-143.

Fan, Y., Barua, A., Cready, W. and Thomas, W. (2010), “Managing Earnings using Classification Shifting: Evidence from Quarterly Special Items”, *The Accounting Review*, Vol. 85 No. 4, pp. 1303-23.

Farber, D. (2005), “Restoring trust after fraud: does corporate governance matter?”, *The Accounting Review*, Vol. 80, pp. 539-561.

- Fields, T., Lyz, T. and Vincent, L. (2001), "Empirical research on accounting choice", *Journal of Accounting and Economics*, Vol. 31 No. 1-3, pp. 255-308.
- Francis, J., Hanna, J. D. and Vincent, L. (1996), "Causes and Effects of Discretionary Asset Write-offs", *Journal of Accounting Research*, Vol. 34 No. Supplement, pp. 117-34.
- Frost, C. A. (1997), "Disclosure policy choices of UK firms receiving modified audit reports", *Journal of Accounting and Economics*, Vol. 23 No. 2, pp. 163-187.
- Ghosh, A. and Moon, D. (2005), "CEO tenure, managerial power and financial reporting", Working paper, The City University of New York.
- Graham, J. R., Harvey, C. R. and Rajgopal, S. (2005), "The Economic Implications of Corporate Financial Reporting", *Journal of Accounting and Economics*, Vol. 40 No. 1-3, pp. 3-73.
- Grinyer, P. H., Mayes, D. G. and McKiernan, P. (1988), *Sharpbenders: The Secrets of Unleashing Corporate Potential*, Basil Blackwell, Oxford.
- Gul, F. A., Fung, S. Y. K. and Jaggi, B. (2009), "Earnings quality: Some evidence on the role of auditor tenure and auditors' industry expertise", *Journal of Accounting and Economics*, Vol. 47, pp. 265-287.
- Gunny, K. A. (2010), "The Relation between Earnings Management using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks", *Contemporary Accounting Research*, Vol. 27 No. 3, pp. 855-88.
- Healy, P. M. (1985), "The effect of bonus schemes on accounting decisions", *Journal of Accounting and Economics*, Vol. 7 No. 1-3, pp. 85-107.
- Healy, P. M. and Wahlen, J. (1999), "A review of the earnings management literature and its implications for standard setting", *Accounting Horizons*, Vol. 13 No. 4, pp. 365-383.
- Herrmann, D., Inoue, T. and Thomas, W. (2003), "The sale of assets to manage earnings in Japan", *Journal of Accounting Research*, Vol. 41 No. 1, pp. 89-108.
- Hofer, C. W. (1980), "Turnaround Strategies", *Journal of Business Strategy*, Vol. 1 No. 1, pp. 19-31.
- Jackson, S., and Wilcox, W. (2000), "Do managers grant sales price reductions to avoid losses and declines in earnings and sales?", *Quarterly Journal of Business and Economics*, Vol. 39 No. 4, pp. 3-20.

- Jaggi, B. and Lee, P. (2002), "Earnings Management Response to Debt Covenant Violations and Debt Restructuring", *Journal of Accounting, Auditing and Finance*, Vol. 17 No. 4, pp. 295-324.
- Janes, T. D. (2003), "Accruals, Financial Distress, and Debt Covenants", Doctoral Dissertation, University of Michigan.
- Jiambalvo, J. (1996), "Discussion of: Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC", *Contemporary Accounting Research*, Vol. 13 No. 1, pp. 37-47.
- Jones, J. (1991), "Earnings management during import relief investigations", *Journal of Accounting Research*, Vol. 29 No. 2, pp. 193-228.
- Kinney, M., and Trezevant, R. (1997), "The use of special items to manage earnings and perceptions", *Journal of Financial Statement Analysis*, Vol. Fall, pp. 45-53.
- Koch, A. S. (2002), "Financial distress and the credibility of management earnings forecasts", GSIA Working Paper No. 2000-10. Pittsburgh, PA: Carnegie Mellon University.
- Kothari, S. P., Leone, A. and Wasley, C. (2005), "Performance matched discretionary accrual measures", *Journal of Accounting and Economics*, Vol. 39 No. 1, pp. 163-197.
- Lara, J. M. G., Osma, B. G. and Neophytou, E. (2009), "Earnings Quality in Ex-post Failed Firms", *Accounting and Business Research*, Vol. 39 No. 2, pp. 119-38.
- Lee, L. F. (2012), "Incentives to Inflate Reported Cash from Operations Using Classification and Timing", *The Accounting Review*, Vol. 87 No. 1, pp. 1-33.
- Leggett, D. M., Parsons, L. M., and Reitenga, A. L. (2009), "Real earnings management and subsequent operating performance", Working Paper. University of Alabama.
- Loui, D. K. and Smith, M. (2006), "Financial distress and corporate turnaround: A review of the literature and agenda for research", Working paper, Edith Cowan University.
- Marquardt, C. A. and Wiedman, C. I. (2004), "How are earnings managed? An examination of specific accruals", *Contemporary Accounting Research*, Vol. 21 No. 2, pp. 461-491.

McKeown, J., Mutchler, J. and Hopwood, W. (1991), "Towards an explanation of auditor failure to modify the audit opinion of bankrupt companies", *Auditing: A Journal of Practice and Theory*, Vol. 10 No. Supplement, pp. 1-13.

McVay, S. (2006), "Earnings Management using Classification Shifting: An Examination of Core Earnings and Special Items", *The Accounting Review*, Vol. 81 No. 3, pp. 501-531.

Previts, G., Bricker, R., Robinson, T. and Young, S. (1994), "A content analysis of sell-side financial analyst company reports", *Accounting Horizons*, Vol. 8 No. 2, pp. 55-70.

Rangan, S. (1998), "Earnings management and the performance of seasoned equity offerings", *Journal of Financial Economics*, Vol. 50, pp. 101-122.

Rogers, J. L. and Stocken, P. C. (2005), "Credibility of management forecasts", *The Accounting Review*, Vol. 80 No. 4, pp. 1233-1260.

Rosner, R. L. (2003), "Earnings Manipulation in Failing Firms", *Contemporary Accounting Research*, Vol. 20 No. 2, pp. 361-408.

Roychowdhury, S. (2006), "Earnings Management through Real Activities Manipulation", *Journal of Accounting and Economics*, Vol. 42 No. 3, pp. 335-70.

Saleh N. M. and Ahmed, K. (2005), "Earnings management of distressed firms during debt renegotiation", *Accounting and Business Research*, Vol. 35 No. 1, pp. 69-86.

Sharma, D. (2001), "The role of cash flow information in predicting corporate failure: The state of the literature", *Managerial Finance*, Vol. 27 No. 4, pp. 3-28.

Shivakumar, L. (2000), "Do firms mislead investors by overstating earnings before seasoned equity offerings?", *Journal of Accounting and Economics*, Vol. 29, pp. 339-371.

Slatter, S. (1984), *Corporate recovery: Successful turnaround strategies and their implementation*, Penguin, Harmondsworth, UK.

Sloan, R. G. (1996), "Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings?", *The Accounting Review*, Vol. 71 No. 3, pp. 289-315.

Stubben, S. R. (2010), "Discretionary revenues as a measure of earnings management", *The Accounting Review*, Vol. 85 No. 2, pp. 695-717.

Sudarsanam, S. and Lai, J. (2001), “Corporate financial distress turnaround strategies: An empirical analysis”, *British Journal of Management*, Vol. 12 No. 3, pp. 183-199.

Sweeney, A. P. (1994), “Debt-covenant Violations and Managers’ Accounting Responses”, *Journal of Accounting and Economics*, Vol. 17 No. 3, pp. 281-308.

Taylor, G. K. and Xu, R. J. (2010), “Consequences of real earnings management on subsequent operating performance”, *Research in Accounting Regulation*, Vol. 22 No. 2, pp. 128-132.

Teoh, S., Rao, G. and Wong, T. (1998), “Are accruals during initial public offerings opportunistic?”, *Review of Accounting Studies*, Vol. 3, pp. 175-208.

Timesofindia.indiatimes.com. 2012. Top PwC India execs signed backdated invoices. March 13th 2012. (<http://timesofindia.indiatimes.com/business/india-business/Top-PwC-India-execs-signed-backdated-invoices/articleshow/12241123.cms>).

Zang, A. (2012), “Evidence on the trade-off between real activities manipulation and accrual-based earning management”, *The Accounting Review*, Vol. 87 No. 2, pp. 675-703.

Zhang, W. (2008), “Real activity manipulation to meet analyst cash flow forecasts”, Working paper, National University of Singapore.

Endnotes

ⁱ Fraud and bankruptcy go hand in hand (2008, <http://www.accountingweb.com/item/106540>).

ⁱⁱ AAER receipt has been used as proxy for accounting fraud in several studies (e.g. Dechow et al., 2011; Erickson et al., 2006).

ⁱⁱⁱ (a) Top PwC India execs signed backdated invoices. March 13th 2012. (<http://timesofindia.indiatimes.com/business/india-business/Top-PwC-India-execs-signed-backdated-invoices/articleshow/12241123.cms>); (b) Satyam fraud: Full text of Raju’s letter to board. January 7th 2009. (<http://www.financialexpress.com/news/satyam-fraud-full-text-of-rajus-letter-to-board/407799/0>)

^{iv} Classification shifting influences only operating income, and not the net income. While a real action like timing the sale of assets or investments doesn’t influence the operating income. To maintain consistency, we focus on only those methods of real activities manipulation which influence operating income.

^v Income excluding non-recurring items