Creditors' Rights and Signed Earnings Management: Evidence from India

Lavanya Kosuri*[a] & Tara Shankar Shaw [b]

*[a] Corresponding Author, Department of Economics, Indian Institute of Technology Bombay, Mumbai, 400076, India.

Email: lavanya.kosuri@iitb.ac.in Ph- 9494632588

[b] Department of Economics, Indian Institute of Technology Bombay, Mumbai, 400076, India. Email: tarashankarshaw@iitb.ac.in Ph- 9769387390

Abstract:

This study examines the impact of strengthened creditor rights on earnings management practices among Indian firms after the advent of the Insolvency and Bankruptcy Code (IBC) 2016. Using a quasi-experimental design with difference-in-differences methodology, we studied whether high-default-risk firms engage in income-increasing earnings management as a strategy to avoid regulatory intervention. Our sample consists of 3,627 firms from 2013 to 2023. The findings reveal that high-default-risk firms significantly increase earnings management activities post-IBC implementation, though this behavior is moderated by corporate governance quality and ownership structure. Specifically, firms with strong governance mechanisms exhibit substantially lower earnings management, while family firms demonstrate more conservative reporting practices compared to non-family firms. The study provides empirical evidence on how bankruptcy law reforms influence managerial reporting incentives and highlights the critical role of corporate governance in mitigating opportunistic behaviour under regulatory pressure. Our results remain robust across alternative measures of earnings management and default risk, as well as under different estimation approaches, including regression discontinuity design and interrupted time series analysis (ITSA).

Keywords: Earnings Management, Bankruptcy law, Distressed firms, Default risk

JEL Codes: G32, G33, G34

I. Introduction:

The Government of India's enactment of the Insolvency and Bankruptcy Code (IBC) in 2016 marked a landmark reform in the country's corporate resolution framework. It was designed to address the inefficiencies of earlier insolvency mechanisms. The IBC introduced a unified, time-bound, and creditor-driven resolution process by empowering the creditors with greater authority over insolvency proceedings. The IBC significantly enhanced the speed and effectiveness of the debt recovery process. This shift has significantly impacted the financially distressed firms, who are unable to meet their financial obligations and maintain profitability, as the IBC fundamentally altered the consequences of default and redefined the bargaining power between debtors and creditors. Faced with stronger creditor enforcement and limited time to restructure, financially distressed firms are incentivized to adapt financial reporting strategies to safeguard their operational flexibility and improve perceived solvency. Previous research (Healy & Wahlen, 1999) indicates that managers facing higher default risk use their discretion to manage earnings, often to mislead stakeholders or to influence contractual outcomes to avoid creditors' takeover. This raises a critical yet underexplored question: how does strengthening the creditor rights under the IBC influence the financial reporting practices -especially the earnings management(EM) practices- of highly distressed firms?

Earnings management is a pervasive corporate finance practice wherein managers use accounting discretion to influence financial reports, thereby shaping stakeholders' perception about the reported financial performance (Dechow & Skinner, 2000). Though it operates within the bounds of accounting standards, the primary incentives of EM are to meet or exceed market expectations, as aligning with analysts' forecasts helps to sustain investor confidence and ensure high credibility in the market (Bergstresser & Philippon, 2006; Healy & Wahlen, 1999). Additionally, firms may also engage in EM to avoid debt covenant violations and avoid costly renegotiation with the creditors (Agrawal & Chatterjee, 2015). Existing literature has consistently demonstrated that financially distressed firms employ both upward and downward EM practices. They may inflate earnings to avoid regulatory scrutiny, meet compliance requirements, and navigate complex regulatory environments, or deflate them to overstate their distress and emphasize their risky financial situation, facilitating quicker exit or restructuring. Further, Extensive literature has examined EM across different economic phases like economic downturns and financial crises (Ming Chia et al., 2007; Roychowdhury, 2006; Callen & Fang, 2013; Bansal, 2024), but less evidence exists on the specific impact of insolvency codes on EM (Park et al., 2021; Riyadh et al., 2024). This gap in the literature motivates our study, which is

grounded in the Positive Accounting Theory. The theory posits that firms near distress are prone to manage their earnings to avoid debt covenant violations so as not to lose their managerial control, initiated after listing into the Corporate Insolvency Resolution Process (CIRP) under the IBC 2016 proceedings.

We exploit the quasi-natural experimental setting created by the implementation of the Insolvency and Bankruptcy Code, 2016, in India to identify the causal impact of the policy on EM. To this end, we employ a generalized difference-in-differences(G-DID) approach to tease out the causal impact of the policy on the EM of the financially distressed firm. Our analysis utilizes the sample of Indian-listed and unlisted non-financial firms from 2013 to 2023, with financial and market data sourced from the ProwessIQ database, managed by the Center for Monitoring the Indian Economy (CMIE). We chose 2013 as the starting period of the analysis as it coincides with the introduction of the Indian Companies Act 2013, thereby ensuring a period with consistent financial reporting policies. Our final sample comprises 3627 unique firms, accounting for 31,344 firm-year observations.

Our findings reveal that high-default-risk firms/financially distressed firms significantly increase positive earnings management following the implementation of IBC. However, this behaviour is moderated by corporate governance quality and ownership structure. Specifically, firms with strong governance quality exhibited substantially lower earnings management, while family firms demonstrated more conservative reporting practices compared to non-family firms. To conduct our analysis, we identified financially distressed firms using the method of Bose et al. (2021) to identify distressed firms if the accumulated losses exceeded 50% of their average net worth over the four years immediately preceding FY 2017. Our identification approach exploits firm heterogeneity based on financial distress, as firms closer to insolvency are more likely to be influenced by the bankruptcy procedures. Discretionary EM was measured by the Modified Jones model (Dechow et al., 1995). We use the signed discretionary accruals (both positive and negative residuals) instead of unsigned(absolute) EM to capture the direction of EM among the financially distressed firms post-implementation of IBC 2016.

Our study contributes to the literature studying the effect of policy reforms strengthening the creditors' right, which includes the work of Vig (2013) studying the effect on secured creditors, Gopalan et al. (2016), Jose et al. (2020), and Bose et al. (2021). However, we study the effect of the government policy changes on the signed earnings management

(Cohen et al., 2008; Zhao et al., 2012; Huang et al., 2020). Secondly, it contributes to the literature on the effects of creditors' rights and previous strands includes reduced firm-level innovation (Acharya & Subramanian, 2009), inefficient liquidation (Acharya et al., 2011), diminished corporate risk-taking (Acharya et al., 2011), lower utilization of collateralized debt (Vig, 2013; Bose et al., 2021), and negative effects on corporate investments (Favara et al., 2017). Thirdly, prior literature on EM has largely focused on the context of initial public offerings (IPOs) across different economic phases—such as pre- and post-economic downturns and financial crises—while relatively little attention has been given to its role under strengthened creditors' rights, as introduced through the IBC in this study. To the best of our knowledge, it offers the first empirical analysis of the effect of strengthened creditor rights on managerial incentives to manipulate earnings using accounting policies through signed discretionary accrual activities. Further, this study highlights the critical role of corporate governance in mitigating opportunistic behaviour under regulatory pressure. Following Singla et al. (2014) and Duggal et al. (2024), we examined the heterogeneity across family firms and nonfamily firms, as 70% of the Indian firms are family-owned and family-controlled (Bansal, 2020). Moreover, the interrupted time series analysis used in this study supports our main empirical results by enabling the visualization of underlying trends of EM over time post the advent of IBC.

The remainder of the paper is organized as follows. Section 2 introduces the institutional background of the IBC in India. Section 3 reviews the existing studies on the relation between financial distress, internal control, and earnings management, and describes the development of our hypotheses. Section 4 discusses our sample collection process and empirical design. We present the empirical findings in Section 5 and robustness checks in Section 6, and conclude our paper in Section 7.

2. Institutional Background:

Prior to the enactment of the Insolvency and Bankruptcy Code (IBC) in 2016, India's insolvency framework was primarily governed by multiple fragmented laws with judicially intensive processes (Branch & Khizer, 2016; Agarwal & Singhvi, 2023). A detailed evolution of India's insolvency framework is shown in Table 1. The reliance on conventional court proceedings resulted in protracted delays in case resolutions, often leading to a deterioration of asset value and suboptimal recoveries for creditors (Sengupta et al., 2016). These inefficiencies were exacerbated by systemic weaknesses in India's judicial system, characterized by procedural delays, limited institutional capacity, and an overburdened judiciary, often taking multiple years, with distressed firms remaining unresolved for up to 10 –15 years. Moreover, the prior legislative framework was prejudiced against creditors, disproportionately restricting their ability to recover dues and access decision-making authority. The IBC aimed to redress these deficiencies by mandating a resolution timeline of 330 days, including litigation[1]. The introduction of the IBC represented a paradigm shift by relocating insolvency proceedings from the exclusive jurisdiction of the courts to a more structured, quasi-judicial framework, with a focus on resolution rather than liquidation (Sahoo & Guru, 2020; Singh et al., 2022). It emphasized the revival of economically viable firms through time-bound processes and incentivized operational restructuring over asset stripping.

Despite these institutional reforms, the effectiveness of the IBC is undermined by persisting deficiencies in financial reporting and audit quality in India. While the implementation of International Financial Reporting Standards (IFRS) converged with Indian Accounting Standards (Ind AS) was intended to enhance transparency and comparability, audit practices remain relatively weak and under-regulated (Adhikari et al., 2021). The inability of auditors to consistently detect accounting irregularities and financial misstatements raises concerns about the reliability of financial disclosures (Hussainey, 2009; Abbott et al., 2016). As a result, there remains significant scope for manipulation, thereby limiting the efficacy of the insolvency framework and the broader objective of financial discipline.

However, from the perspective of debtor firms, initiating insolvency proceedings under the IBC is often regarded as a drastic measure with considerable implications for managerial control, creditworthiness, and market perception (Eckbo et al., 2016).

[1] Details on IBC were collected from multiple reports and articles from 'Resources' section of IBBI website, a link of which is provided here- https://www.ibbi.gov.in/resources/reports.

INSERT TABLE 1 HERE

3. Literature & Hypothesis Development:

Earnings management (EM) refers to the exercise of managerial discretion in influencing the earnings figure to achieve specific objectives, often by altering accounting choices or applying judgment in financial reporting (Healy & Wahlen, 1999). Prior literature identifies multiple motivations for earnings management, including the desire to meet or exceed earnings benchmarks (Degeorge et al., 1999), influence stock prices (Healy & Wahlen, 1999), and reduce the cost of capital (Louis, 2004). It is also used to enhance executive compensation tied to financial performance (Bergstresser & Philippon, 2006) or to conceal poor performance (Roychowdhury, 2006). As stated above, EM is particularly prevalent around critical firm events such as initial public offerings (IPOs), mergers and acquisitions, and periods of financial distress because firms have strong incentives to present a stable financial position (Teoh et al., 1998; DeFond & Jiambalvo, 1994; Renneboog & Vansteenkiste, 2019). During IPOs, firms resort to EM to boost valuation and attract investors (Dechow et al., 2000); in mergers, both buyers and sellers seek EM for favourable deal terms (Lalwani & Jain, 2025); and in distress, firms attempt to undertake both upward or downward EM either to avoid covenant violation or to overstate distress so as to facilitate quicker restructuring when stronger creditor rights persists. All the above events contribute to heightened information asymmetry, allowing managers to manipulate earnings through accounting choices. In addition, regulatory pressures related to financial disclosures (Cohen et al., 2008) and loan covenant compliance (Zang, 2012) may further incentivize firms to engage in earnings management as a means to signal financial stability, minimize the risk of penalties, and maintain their market reputation.

Financial distress refers to a situation in which a firm faces difficulty in meeting its financial obligations. It reflects a weakened financial position that threatens the firm's operational viability and may impair its ability to service debt, maintain liquidity, or sustain investor confidence (Altman, 1968; Andreou et al., 2021; Farooq et al., 2018; Yazdanfar & Öhman, 2020). Earnings management in the context of financial distress can be interpreted through two competing theoretical lenses: (a) the Opportunistic (Debt Avoidance) View and (b) the Attribution (Distress-Revealing) View.

Positive Accounting Theory is an approach in accounting research that seeks to explain and predict accounting practices based on the assumption that individuals (particularly managers) act in their own self-interest. It suggests that managers apply their accounting

expertise to select policies that best respond to anticipated future conditions, often influenced by personal incentives and contractual obligations (Watts & Zimmerman, 1990). The theory contends that managers influenced by incentives such as performance-based compensation (Burns & Kedia, 2006), stock options (Kuang, 2008), and job security strategically select accounting methods that enhance their personal or organizational advantage. This perspective aligns closely with the Opportunistic View of Debt Avoidance, which posits that managers manipulate earnings to show financial stability and avoid adverse outcomes such as debt covenant violations, credit rating downgrades, or increased borrowing costs (Jiraporn et al., 2008; Watts & Zimmerman, 1986). Bose et al. (2021) found that post-IBC, there has been improved credit market efficiency, evidenced by greater credit availability and reduced borrowing costs for distressed firms relative to non-distressed ones. Further, Singh et al. (2024) observed that financially vulnerable firms experienced a greater increase in the use of trade credit following a regulatory intervention that strengthened creditor rights. In this line, where there's a presence of stronger creditors' rights and availability of bank and trade credit, financially distressed firms tend to show more profitability by choosing opportunistic action, i.e, income-increasing EM. This study posits that highly distressed firms may engage in income-increasing EM to portray a more favourable financial position, thereby improving their chances of accessing capital or negotiating with creditors.

In contrast, the Attribution view posits that how users (creditors, analysts, investors) attribute behaviour to either internal factors (intent or strategy) or external factors (regulatory pressures) (Harvey et al., 2014; Kalbers, 2009; Stang & Kelton, 2008). In the context of the IBC, stakeholders may interpret managerial actions as reflecting either deliberate strategies aimed at influencing restructuring outcomes or as responses to heightened regulatory and financial pressures associated with insolvency proceedings. From this perspective, income-decreasing EM during financial distress may not necessarily be viewed as manipulation but rather as a credible signal of the firm’s underlying financial condition. Creditors, for example, may attribute such behavior to genuine efforts by management to clean up the balance sheet, communicate distress more transparently, or reset stakeholder expectations as part of a strategic turnaround, thereby facilitating debt renegotiation. Similarly, distressed firms might employ income-decreasing EM to present a more accurate picture of their financial condition, either to enable a dignified exit through IBC-led liquidation or to strengthen bargaining power in out-of-court settlement negotiations. Conversely, managers may avoid income-decreasing EM to sidestep the stigma and procedural burden of the IBC process, preserve ownership and

perceived firm value, or prevent negative outcomes such as delisting, consistent with survival motives documented in prior research (Graham et al., 2005).

Prima facie, it is difficult to ascertain the direction of EM, making it essentially an empirical question. In the context of India's IBC 2016, it is plausible that financially distressed firms may engage in either income-increasing or income-decreasing EM strategies post-IBC. These perspectives underscore the dual role of EM— it can conceal financial distress by increasing reported income or credibly reveal a firm's true condition by decreasing income to renegotiate debt terms, depending on managerial motives and institutional context. Thus, we propose the following hypothesis.

H1: Highly distressed firms are more likely to be engaged in either positive or negative earnings management

Corporate governance (CG) plays a central role in ensuring transparency and accountability in financial reporting by constraining managerial discretion over accruals and limiting the scope for EM. Effective governance mechanisms, including independent boards, active audit committees, and rigorous disclosure practices, are designed to present an unbiased representation of a firm's financial position. These mechanisms reduce information asymmetry and mitigate the Type I agency problem between managers and shareholders. This function becomes particularly salient in the context of financial distress, where managerial incentives to manipulate earnings are amplified either through upward EM to avoid covenant violations and preserve credit access, or through downward EM to overstate distress and secure restructuring benefits. In such settings, stronger governance mechanisms act as a countervailing force, discouraging opportunistic behavior and reinforcing the credibility of financial disclosures. In the Indian context, where regulatory reforms and SEBI's corporate governance frameworks have progressively strengthened institutional oversight, the role of governance in curbing EM is especially pronounced. Accordingly, financially distressed firms with stricter governance structures are expected to engage less in EM, as the institutional emphasis on reliable reporting outweighs managerial incentives to distort earnings.

Several studies have researched the moderation of corporate governance proxied by managerial ownership, institutional ownership, independent directors, and audit quality towards the influence of leverage on earnings management (Asghar et al., 2020; Khafid & Arief, 2017; Lin et al., 2010). The results of these studies have proven that these proxies moderate the influence of leverage on earnings management. In this study, we used five board-level

components/executive traits to create a corporate governance index (CGIndex)(see Table 4) to further check the stringency of the board. Thus, the existence of corporate governance can suppress the presence of the opportunistic behavior of managers related to debt contracts that can reduce the quality of corporate profits. Therefore, our second hypothesis of this study is as follows.

H2: Highly distressed firms with stricter corporate governance are less likely to be engaged in earnings management

Signed vs Unsigned Earnings Management:

In the literature, EM is typically identified as the deviation of reported accruals from those predicted by an expectation model, most commonly estimated using variants of the Jones 1991 model or the modified Jones 1995 model. Prior studies have used the absolute value of residuals (unsigned EM) from accrual models as a normalized proxy for the magnitude of discretionary accruals, capturing the overall extent of managerial discretion in financial reporting. These deviations may reflect either income-increasing or income-decreasing behavior, depending on the firm's strategic incentives. However, the distinction between signed and unsigned discretionary accruals remains important, as each serves a distinct analytical purpose for capturing not only the magnitude but also the direction of earnings management. (Healy, 1985; DeAngelo, 1986; Jones, 1991; Defond & Jiambalvo, 1994; Perry & Williams, 1994; Dechow, Sloan, and Sweeney, 1995; DeFond & Subramanyam, 1998). As unsigned EM fails to distinguish between income-increasing (aggressive) and income-decreasing (conservative) manipulations, potentially conflating managerial opportunism with adjustments (Dechow & Dichev, 2002; Frankel et al., 2002; Klein, 2002; Chung & Kallapur, 2003; Myers et al., 2003; Leuz et al., 2003; Bergstresser & Philippon, 2006). In contrast, signed EM preserves the direction of manipulation, making it critical when testing directional predictions, such as firms inflating earnings to avoid insolvency or while planning for an IPO event, further by deflating earnings during bankruptcy proceedings, or to show the true picture of the firm's status (Burgstahler & Dichev, 1997; Dechow et al., 2003; McNichols & Stubben, 2008).

4. Data, Methodology, and Variables:

Firm-level Financial and market data were obtained from the ProwessIQ database maintained by the Centre for Monitoring Indian Economy (CMIE). Our sample includes Indian-listed and unlisted non-financial firms within a quasi-natural experiment framework. Our study period is from 2013, when the Indian Companies Act came into existence, to 2023. Our final sample comprises 3,627 unique firms, accounting for 31,344 firm-year observations.

Using three measurements, we measure the dependent variable, discretionary accrual earnings management (AEM). The main method is by following the Modified Jones model by Dechow (1995) (hereafter AEM-D), Further, we used the Jones Model (Jones, 1991) (hereafter AEM-J) and the Modified Jones model with ROA (Kothari et al., 2005) (hereafter AEM-K), as alternate discretionary measures for robustness checks.

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left(\frac{1}{A_{it-1}}\right) + \alpha_2 \left(\frac{\Delta Rev_{it}}{A_{it-1}}\right) + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}}\right) + \epsilon_{i,t} \quad \textbf{(1)}$$

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left(\frac{1}{A_{it-1}}\right) + \alpha_2 \left(\frac{\Delta Rev_{it} - \Delta Rec_{it}}{A_{it-1}}\right) + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}}\right) + \epsilon_{i,t} \quad \textbf{(2)}$$

$$\frac{TA_{t}}{A_{t-1}} = \delta_0 + \delta_1 \left(\frac{1}{A_{t-1}}\right) + \delta_2 \left(\frac{\Delta Rev_{it} - \Delta Rec_{it}}{A_{it-1}}\right) + \delta_3 PPE_{i,t} + \delta_4 ROA_{i,t} + \epsilon_{i,t} \quad \textbf{(3)}$$

$\alpha_1, \alpha_2, \alpha_3$ are firm-specific parameters obtained by the following model. (ΔRev_t) is the change in revenue, (ΔRec_t) change in receivables in the event year, $PPE_t$is plant and equipment in year *t* for firm *i.* All the variables are based on the variable TA_{it}. This treatment controls for the presence of heteroskedasticity in the distribution to have a theoretical association with the variance of the error term. We used the signed residuals as discretionary accruals from each of the above equations.

Further, for the main independent variable distress measure, we followed the treatment variable of Bose et al.(2021) with slight modifications, such as if a firm in a year has accumulated losses greater than 50% of its average net worth in the immediately preceding 4 years prior to FY 2017. To causally estimate the impact of the Insolvency and Bankruptcy Code (IBC) on the discretionary earnings management of high-default-risk firms, we have employed the Generalized Difference-in-Differences framework as follows:

$$\boldsymbol{SEM_{it} = \beta_0 + \beta_1 (Treatment_i * Post_t) + \Upsilon X_{it} + \delta_t + \epsilon_{it}}$$

Here, i refers to firm, and t indicates year. SEM_{it} the outcome variable indicates signed discretionary accruals for unit i at time t. β_0 is the intercept term, capturing the average value of Y_{it} for the control group in the pre-treatment period. $Treatment_i$ is a binary variable 1 for highly distressed firms pre-IBC and 0 otherwise. $Post_t$ is a binary variable indicating 1 for all the years after the enactment of IBC, i.e., 2017. $\boldsymbol{\beta_1}$ is the interaction term representing the differential change in Y_{it} due to treatment in the post-treatment period. $\Upsilon \boldsymbol{X_{it}}$ is a vector of control variables that may influence Y_{it}, (Tobinsq, Ncfota, Current ratio, firm age (Natural logarithm of the number of years since incorporation); firm size (Natural logarithm of total sales); LTBTA (Long long-term Borrowings scaled upon total assets); Tangibility(Net Fixed assets (PPE) scaled by total assets); degree of indebtedness (current liabilities scaled by current assets) (detailed in Appendix A). CGIndex is a corporate governance index created based on five board-level characteristics to check the stringency of the board on the firm (detailed in Table 3). $\boldsymbol{\epsilon_{it}}$ is the error term. δ_t captures the average change in Y_{it} for the control group post-treatment period. The standard errors are clustered at the firm level. $\boldsymbol{\epsilon_{it}}$ is the error term. δ_t captures the average change in Y_{it} for the control group in the post-treatment period.

Variables & Descriptive statistics:

The descriptive statistics and description of variables are presented in Tables 2 and 3.

INSERT TABLE 2 HERE

INSERT TABLE 3 HERE

We construct a Corporate Governance Index (CG Index) to assess the independence and effectiveness of corporate governance mechanisms, incorporating factors such as board composition, nomination committee, remuneration committee, and audit committee structures (see Table 4 for details). The index ranges from 0 to 23, with higher values indicating stronger, more independent governance at the firm level. Our objective is to examine whether firms with strict corporate governance are less likely to engage in earnings management, particularly in the presence of financial distress, compared with non-distressed firms post-IBC.

INSERT TABLE 4 HERE

5. Main Empirical Results:

INSERT TABLE 5 HERE

Table 5 presents the results of difference-in-differences regressions estimating the effect of the creditors' rights on earnings management practices of high-default-risk (HDF) firms over the period 2013–2023. The analysis considers four different measures of EM: unsigned EM (Column 1), signed EM (Column 2), positive EM (Column 3), and negative EM (Column 4). The results indicate that the interaction term HDF × POST is positive and statistically significant in Columns (1)–(3), suggesting that high-default-risk firms engaged in greater earnings management following the implementation of the IBC. Similarly, Column (4) shows a negative and significant coefficient of −0.005 ($p < 0.01$), indicating a reduction in income-decreasing EM after the IBC's enactment.

INSERT TABLE 6 HERE

Table 6 reports our preliminary findings, revealing that highly distressed firms have been engaged in positive EM after the advent of IBC. Panel A includes all the years from 2013 to 2023, whereas Panel B includes the restricted sample till 2020 (pre-COVID). The coefficient of interaction of the HDR firm dummy with the Post-IBC period dummy is positive and statistically significant. The findings suggest that highly distressed firms have increased their earnings management by 0.017 points. It indicates that HDR firms are highly engaged in discretionary earnings management after implementing the IBC code in India. We also control for the industry times year fixed effects to account for the unobserved factors at the industry-year level. The results are consistent with the theory and literature that high-default-risk firms do more earnings management to escape from default and regulatory compliance (Hill et al., 2019; Liu et al., 2018; Brown et al., 2015). Further, we have estimated the impact of IBC only for the listed and unlisted firms' samples. The results are consistent with the full sample results, indicating that the listed high default risk firms engaged in earnings management after the implementation of the IBC code. However, we do not find any statistically significant impact on the earnings management for unlisted high-default risk firms.

INSERT FIGURE 1.1 & FIGURE 1.2 HERE

To assess the validity of the parallel trends assumption, we conduct an event study regression. The parallel trends assumption requires that, prior to the intervention, the treatment and control groups exhibit a similar trajectory in the outcome variable. To evaluate this, we estimate the

impact of the treatment for each time period separately. Figures 1.1 and 1.2 represent the coefficient plot for our baseline specification across different periods, with the year 2016 serving as the base period—the year in which the Insolvency and Bankruptcy Code (IBC) was enacted.

The results indicate that, prior to the implementation of the IBC, there was no statistically significant difference in earnings management between high-default-risk and low-default-risk firms. This confirms that pre-existing trends in EM do not confound our findings among firms with high default risk. However, following the IBC intervention, we observe a sharp increase in earnings management among high-default-risk/ highly distressed firms relative to their counterparts. This effect is particularly pronounced in the first two years after the IBC's implementation, suggesting that firms facing high default risk strategically engaged in earnings management as a response to strengthened creditor rights, likely as a means to mitigate potential default risks.

INSERT TABLE 7 HERE

To analyze this, we introduce an interaction term between the CG Index and the difference-in-differences (DID) specification. The triple interaction term captures the moderating effect of corporate governance on the earnings management behavior of highly distressed firms post-implementation of the Insolvency and Bankruptcy Code (IBC). In line with our hypothesis, we expect a negative coefficient on the triple interaction term, indicating that strong governance mitigates earnings management incentives among distressed firms. Table 7 shows that firms with higher corporate governance quality exhibit lower levels of earnings management following the IBC in various types of earnings management, especially in columns 1 to 3. The effect is most pronounced in signed EM, with smaller but still significant effects in unsigned and positive EM. The results indicate that across all types of EM accrual measures(unsigned, signed, and positive), higher governance quality consistently reduces earnings management in the post-IBC period. These findings underscore the complementary role of corporate governance in enhancing the effectiveness of policy interventions like IBC by mitigating opportunistic managerial behavior.

INSERT FIGURE 2 HERE

INSERT TABLE 8 HERE

The results presented in Table 8 confirm that firms with higher corporate governance quality exhibit lower levels of earnings management following the IBC. Additionally, we classify firms into high and low corporate governance groups based on whether their CG Index value exceeds the median. To further explore this relationship, we estimate separate event study regressions for firms with high and low CG Index scores. Figure 2 plots the DID coefficients over time for both categories, revealing no significant pre-trend differences. However, post-IBC, high-default-risk firms with strong corporate governance exhibit significantly lower earnings management compared to those with weaker governance structures. These findings from the event study framework align with our triple difference-in-differences estimates reported in Table 8, reinforcing the role of strong and effective corporate governance in curbing earnings management among financially distressed firms.

INSERT TABLE 9 HERE

The results in Table 9 signify the moderating effect of family control and family-managed (FCFM) firms. The interaction term HDF × POST × FCFM is negative (-0.010) and significant at the 5% level, suggesting that when firms are both family-controlled and family-managed, the post-IBC increase in earnings management among distressed family firms is greater when compared to non-family firms. This aligns with the notion that direct family involvement in both ownership and management strengthens internal monitoring and fosters reputational concerns, thereby restraining opportunistic accounting practices.

6. Robustness and additional analyses

6.1. Regression discontinuity design to establish causality

We further employ a Regression Discontinuity (RD) design following Black (1999). to examine the relationship between creditor rights and earnings management among high-default-risk firms. The RD approach leverages a discontinuous change in earnings management (EM) around a defined cutoff point for firms' default risk. Specifically, the cutoff is set where a firm's average accumulated loss before the implementation of the IBC exceeds half of its average net worth before the IBC.

The running variable in our RD framework represents the distance between a firm's average accumulated loss before IBC and half of its average net worth before IBC, scaled by total assets. The cutoff value for this score variable is set at zero. We re-estimate our baseline DID

specification on a restricted sample within varying bandwidths around the cutoff to establish a causal relationship between default risk and earnings management.

INSERT TABLE 10 HERE

Table 10 presents the results of our RD analysis. In Column (1), we implement the baseline specification within a narrow bandwidth of ±0.05 around the cutoff point. The results are positive and statistically significant, suggesting a robust relationship within this restricted sample. Moreover, the estimated magnitude of the effect on earnings management is comparable to that found in our baseline regression in Table 10. The RD design allows us to compare firms with similar characteristics and default risk profiles across the control and treatment groups. Notably, the findings remain consistent across different bandwidths around the cutoff point, reinforcing the robustness of our results.

INSERT Figure 3.1 & 3.2

Figures 3.1 and 3.2 illustrate a clear discontinuity in predicted earnings management at the cutoff point. The regression plot exhibits an upward shift for firms positioned to the right of the cutoff, indicating a distinct change in earnings management behavior.

6.2. Matching samples to address endogeneity bias

Prior to IBC, Distressed and non-distressed firms may possess different characteristics; we applied the Mahalanobis distance matching method based on firm size, profitability, export intensity, and degree of indebtedness of the firm prior to 2017 to conduct the analysis.

INSERT TABLE 11 & TABLE 12 HERE

To obtain an unbiased estimate of the treatment effect, the control group must serve as an appropriate counterfactual for the treatment group. We employ Mahalanobis distance matching to mitigate selection bias arising from inherent differences between the two groups. This non-parametric approach relies on the Euclidean distance between covariates of units in the treatment and control groups, with a lower distance indicating greater similarity in characteristics. We use the same covariates from our baseline specification (1) to perform the Mahalanobis distance matching.

Following the matching procedure, we re-estimate our baseline regression of earnings management on the matched sample. The results, presented in Table 11, show that the effect of

high-default risk on earnings management remains positive and statistically significant. However, the magnitude of the estimate is relatively smaller, likely due to the reduced sample size post-matching. These findings suggest that the observed earnings management effect in high-default risk firms is not driven by intrinsic differences between high-default risk and low-default risk firms, reinforcing the robustness of our results.

6.3 Alternative measures and models

Following Vassalou and Xing (2004), Bharath and Shumway (2008), and Khan and Ahmad (2022), we compute the default risk of a firm following the Merton (1974) model, where the default risk is the probability that the value of assets, V_A The value of a firm will fall below its debt value, L in a given time t. The market value of the asset is determined from the market value of equity as well as debt, where the asset value, V_A is assumed to follow a log-normal distribution with mean μ_A and standard deviation σ_A. Following Merton (1974), Vassalou and Xing (2004), Bharath and Shumway (2008), the market value of equity is modelled using the Black Scholes valuation of European call options.

$$V_E = V_A \times N(d_1) - L.e^{-rT}N(d_2)$$

where $d_1 = \frac{(\ln\left(\frac{V_A}{L}\right)+\left(r-\frac{\sigma_A^2}{2}\right)T)}{\sigma_A\sqrt{T}}$ and $d_2 = d_1 - \sigma_A\sqrt{T}$

Here, r represents the risk-free rate of return and T is the time horizon over which the default risk is computed.

Furthermore, the relationship between the equity volatility, σ_E and asset volatility, σ_A is given by the Ito's lemma:

$$\sigma_A\left(\frac{V_A}{V_E}\right)\Phi(d_1) = \sigma_E$$

The default risk of the firm is the probability that the market value of assets falls below the serviceable debt value which can be given as follows:

$$Prob\left(\ln\left(V_{A,t+T}\right) \leq \ln\left(V_{L,T}\right)\middle|V_{A,t}\right) = N(-d_2)$$

Thus, $N(-d_2)$ gives the probability of default or the measure of default risk, whereas d_2 is the measure for distance to default. d_2 shows the distance in terms of standard deviation, how far a firm is lying away from the default frontier. The results are shown in Table 14, column 2.

Secondly, to enhance the robustness of our analysis, we excluded firms that underwent initial public offerings (IPOs), mergers, or amalgamations prior to 2017. The rationale for this exclusion is rooted in the distinct incentives these firms have for engaging in EM, which are unrelated to financial distress. Firms undergoing IPOs often manipulate earnings to present a more favorable financial position and attract investors, while those involved in mergers or amalgamations may adjust financial statements to align reporting structures or optimize tax and regulatory considerations. Including such firms in the sample could introduce significant noise, as factors beyond financial distress influence their earnings management behavior.

By eliminating these firms, we mitigate potential confounding effects and ensure that observed variations in EM can be more directly attributed to default risk and the introduction of the IBC. This approach strengthens the causal interpretation of our findings by isolating financial distress as the primary driver of EM behavior rather than strategic reporting adjustments associated with corporate restructuring. Furthermore, if the results remain consistent even after the exclusion of these firms, it reinforces the validity of our conclusions, demonstrating that financial distress, rather than IPO or M&A-related factors, plays a critical role in shaping EM practices in the post-IBC period. The results of the same are shown in Table 13.

INSERT TABLE 13 HERE

To further enhance the robustness of our analysis, we restrict our sample to firms that credit rating agencies have rated (HDR–R). This refinement allows us to incorporate an objective and standardized measure of financial health, thereby reducing potential biases arising from self-reported financial indicators. By leveraging credit ratings, we systematically classify firms into distressed and non-distressed categories based on their ratings, ensuring a more precise identification of firms facing elevated default risk. A firm credit rating provided by credit rating agencies. The rating grades are converted to rating numbers such that: 1= Highest Safety, 2= High Safety, 3=Adequate safety, 4= Moderate safety, 5=Inadequate safety, 6= High risk, 7= Substantial risk, and 8= Default. (Jiang, 2008; Duggal et al., 2024).

This methodological refinement strengthens our empirical design in two key ways. First, it mitigates the risk of misclassification by relying on independent assessments rather than firm-specific financial disclosures, which may themselves be subject to earnings management. Second, it allows us to capture varying degrees of financial distress, providing a more granular analysis of how firms with different credit risk profiles engage in earnings management post-IBC.

Re-running our analysis within this refined sample serves as an additional robustness check. Our findings remain consistent and further validate the argument that financial distress, rather than firm-specific reporting strategies, is a key driver of earnings management behavior in the post-IBC period. This approach reinforces the reliability of our results and ensures that our inferences about the impact of default risk on earnings management remain robust to alternative firm classifications. The results are shown in Table 14, column 1. Similarly, we used the Altman Z score as the treatment variable, and the results are shown in Table 14, columns (3 and 4) respectively.

INSERT TABLE 14 HERE

6.4 Interrupted time series analysis (ITSA)

In addition to the Difference in Difference method, a good empirical design for a national policy applying to all firms without a control group can be estimated by ITSA as a supplemental method to the regression discontinuity design to control for autocorrelation between time-series data (Linden, 2024). Hence, we performed interrupted time-series analysis for single and multiple group comparisons. Basically, using an XTITSA command in STATA. It can also draw the trend as the policy intervention here is expected to interrupt the level or trend subsequent to its introduction. Here, the earnings management trend after the intervention of IBC is observed in fig. 4

In addition to the Difference-in-Differences method, Interrupted Time Series Analysis (ITSA) provides a robust empirical design for evaluating nationwide policies applied uniformly to all firms when no traditional control group is available (Linden, 2024). ITSA serves as a supplementary approach to regression discontinuity designs by addressing autocorrelation in time-series data. Accordingly, we employed ITSA for multiple-group comparisons using the XTITSA command in STATA. This method also facilitates graphical trend analysis, which is

particularly relevant when the policy intervention is expected to alter the level or trajectory of the outcome variable following its implementation. In this study, the post-IBC earnings management trends are presented in Figure 4, and the results of this estimation are presented in Table 15.

INSERT FIGURE 4 HERE

INSERT TABLE 15 HERE

The results of Table 15, especially the coefficient of Treat × Post, are significant, indicating the immediate trend post-IBC.

6.5 Sectoral Heterogeneity of Firms

6.5.1 Manufacturing VS Non-Manufacturing Firms

Manufacturing firms are typically capital-intensive and debt-dependent, making them more vulnerable to financial distress, whereas service firms rely more on equity and operate with lower leverage. Segregating manufacturing from non-manufacturing sector firms allows us to test whether EM practices differ across these structurally distinct industries, and whether distress-driven EM is concentrated in debt-heavy manufacturing firms. The findings reveal that, regardless of sector, both manufacturing and non-manufacturing firms exhibit an increase in EM post-IBC. The results of the same are shown in TABLE 16.

INSERT TABLE 16 HERE

Further, we examined the moderating effect of the CG Index and found that there is an increase in EM in both manufacturing and non-manufacturing, but governance reduces EM only in non-manufacturing within the overall sample, not for listed firms. The results of the same are shown in TABLE 17.

INSERT TABLE 17 HERE

6.5.2 Sub-Sample analysis of Capital-intensive vs Non-Capital-intensive firms

We examine whether EM behavior differs between capital-intensive and non-capital-intensive firms. Capital-intensive firms, with higher debt reliance and stronger creditor monitoring, are expected to adopt income-increasing strategies to maintain credit access, compared to non-capital-intensive firms. However, our sub-sample analysis reveals that both groups

predominantly engage in income-increasing earnings management, suggesting that the post-IBC environment creates uniform incentives for firms to present stronger financial performance irrespective of capital intensity. The results of the same are shown in Table 18.

INSERT TABLE 18 HERE

6.5.3 Sub-Sample analysis of Debt-oriented firms vs Non-Debt-oriented firms.

We further analyze whether the extent of EM differs between debt-oriented and non-debt-oriented firms. face relatively fewer debt-related monitoring pressures, which could allow greater scope for discretionary reporting choices. Our sub-sample evidence, however, indicates that both debt-oriented and non-debt-oriented firms predominantly pursue income-increasing earnings management, underscoring the pervasive incentives under the IBC regime to signal financial stability and preserve market confidence.

To examine heterogeneity, we compare debt-intensive and non-debt-intensive firms. Debt-oriented firms, given their dependence on external borrowing and closer scrutiny from creditors, are expected to engage in income-increasing reporting to avoid covenant violations and sustain credit relationships compared to non-debt-oriented firms. But our results of Columns (1) and (3) of Table 19 show that both groups exhibit significant income-increasing EM post-IBC, with coefficients of 0.013 and 0.019, respectively. Interestingly, the magnitude is higher for non-debt-intensive firms, suggesting that the incentive to signal financial stability is not limited to firms facing stronger creditor monitoring.

Further, when we interacted with the CG Index (Columns 2 and 4 of Table 19), we find that stronger governance mechanisms significantly mitigate income-increasing EM in both sub-samples. The coefficients on the triple interaction (−0.030 and −0.047) are negative and statistically significant, indicating that effective governance restrains opportunistic reporting practices. Notably, the moderating effect of governance is more pronounced for non-debt-intensive firms, implying that in the absence of debt-related monitoring, governance structures play a critical disciplining role in constraining managerial discretion.

INSERT TABLE 19 HERE

6.5.4 Sub-Sample analysis of External Commercial Borrowings (ECB) VS Non-External Commercial Borrowings (NECB)

We further explore to understand how firms' access to foreign debt financing through External Commercial Borrowings (ECB) shapes EM behavior compared to non-ECB firms. Hence, we

distinguished between firms that accessed external finance as part of their capital structure versus firms with no ECB, and performed a similar analysis. Results in Columns (1)–(4) of Table 20 indicate that both ECB and non-ECB firms exhibit significant income-increasing EM post-IBC. For the overall sample, the coefficient is 0.020 for ECB firms and 0.016 for non-ECB firms, suggesting that firms reliant on foreign borrowings are slightly more aggressive in upward earnings manipulation, possibly to maintain credibility with international lenders.

INSERT TABLE 20 HERE

6.5.5 Sector-wise EM and the Mediating Role of Corporate Governance of Firms with ECB VS NECB

We further looked into the mediating role of CG for ECB and non-ECB firms. The findings show that non-ECB firms exhibit significant income-increasing EM post-IBC, while ECB firms do not. This indicates that domestic firms without access to external finance face greater incentives to signal financial stability. Moreover, the negative and significant interaction with CG for non-ECB firms suggests that stronger governance mechanisms mitigate opportunistic reporting, whereas for ECB firms, external monitoring already constrains such behavior. The results of the same are shown in Table 21.

INSERT TABLE 21 HERE

7. Discussion and conclusion

We investigate the impact of strengthening creditors' rights on EM of financially distressed/high-default-risk Indian firms. We established that the implementation of the Insolvency and Bankruptcy Code (IBC) in 2016 has significantly affected the EM behaviour of the highly distressed non-financial firms. Following the enactment of the IBC, these highly distressed firms engage more in income-increasing discretionary EM compared to non-distressed firms. However, we highlight that the strict CG in place reduces the scope for discretionary EM by the firms. We found that the firm's ownership also matters; the family-owned and family-controlled firms follow a more conservative approach and manage less earnings relative to the non-family firms.

To the best of our knowledge, our study offers the first empirical evidence on the effect of strengthened creditor rights on managerial incentives to manipulate earnings through discretionary accrual activities. This provides an insight into the unintended consequences of

strengthened creditor rights, revealing how managerial discretion over financial reporting may serve as a strategic response to heightened external scrutiny.

REFERENCES

Abbott, L. J., Daugherty, B., Parker, S., & Peters, G. F. (2016). Internal audit quality and financial reporting quality: The joint importance of independence and competence. *Journal of Accounting Research*, *54*(1), 3-40.

Adhikari, A., Bansal, M., & Kumar, A. (2021). IFRS convergence and accounting quality: India a case study. *Journal of International Accounting, Auditing and Taxation*, *45*, 100430.

Agarwal, S., & Singhvi, B. (2023). Creditor-controlled insolvency and firm financing–Evidence from India. *Finance Research Letters*, *54*, 103813.

Agrawal, K., & Chatterjee, C. (2015). Earnings management and financial distress: Evidence from India. *Global Business Review*, *16*(5_suppl), 140S-154S.

Ahmed, A. S., Takeda, C., & Thomas, S. (1999). Bank loan loss provisions: a reexamination of capital management, earnings management and signaling effects. *Journal of accounting and economics*, *28*(1), 1-25.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The journal of finance*, *23*(4), 589-609.

Andreou, C. K., Andreou, P. C., & Lambertides, N. (2021). Financial distress risk and stock price crashes. *Journal of Corporate Finance*, *67*, 101870.

Asghar, A., Sajjad, S., Shahzad, A., & Matemilola, B. T. (2020). Role of discretionary earning management in corporate governance-value and corporate governance-risk relationships. *Corporate Governance: The International Journal of Business in Society*, *20*(4), 561-581.

Bansal, M. (2020, December). Family firms and earnings management: Empirical evidence from India. In *e-journal-First Pan IIT International Management Conference–2018*.

Bansal, M. (2024). Earnings management: a three-decade analysis and future prospects. *Journal of Accounting Literature*, *46*(4), 630-670.

Bergstresser, D., & Philippon, T. (2006). CEO incentives and earnings management. *Journal of financial economics*, *80*(3), 511-529.

Bharath, S. T., & Shumway, T. (2008). Forecasting default with the Merton distance to default model. *The Review of Financial Studies*, *21*(3), 1339-1369.

Black, S. E. (1999). Do better schools matter? Parental valuation of elementary education. *The quarterly journal of economics*, *114*(2), 577-599.

Bose, U., Filomeni, S., & Mallick, S. (2021). Does bankruptcy law improve the fate of distressed firms? The role of credit channels. *Journal of Corporate Finance*, *68*, 101836.

Branch, B., & Khizer, A. (2016). Bankruptcy practice in India. *International Review of Financial Analysis*, *47*, 1-6.

Brown, K., Chen, V. Y., & Kim, M. (2015). Earnings management through real activities choices of firms near the investment–speculative grade borderline. *Journal of Accounting and Public Policy*, *34*(1), 74-94.

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of accounting and economics*, *24*(1), 99-126.

Burns, N., & Kedia, S. (2006). The impact of performance-based compensation on misreporting. *Journal of financial economics*, *79*(1), 35-67.

Callen, J. L., & Fang, X. (2013). Institutional investor stability and crash risk: Monitoring versus short-termism?. *Journal of Banking & Finance*, *37*(8), 3047-3063.

Chhillar, P., & Lellapalli, R. V. (2022). Role of earnings management and capital structure in signalling early stage of financial distress: a firm life cycle perspective. *Cogent Economics & Finance*, *10*(1), 2106634.

Chung, H., & Kallapur, S. (2003). Client importance, nonaudit services, and abnormal accruals. *The accounting review*, *78*(4), 931-955.

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre-and post-Sarbanes-Oxley periods. *The accounting review*, *83*(3), 757-787.

Das, A., Agarwal, A. K., Jacob, J., Mohapatra, S., Hishikar, S., Bangar, S., ... & Sinha, U. K. (2022). Insolvency and bankruptcy reforms: the way forward. *Vikalpa*, *45*(2), 115-131.

DeAngelo, L. E. (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *Accounting review*, 400-420.

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The accounting review*, *77*(s-1), 35-59.

Dechow, P. M., Richardson, S. A., & Tuna, I. (2003). Why are earnings kinky? An examination of the earnings management explanation. *Review of accounting studies*, *8*, 355-384.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting review*, 193-225.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting review*, 193-225.

Dechow, P.M., Sloan, R.G. and Sweeney, A.P. (2000), "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. 1-36.

DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of accounting and economics*, *17*(1-2), 145-176.

DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of accounting and economics*, *17*(1-2), 145-176.

DeFond, M. L., & Subramanyam, K. R. (1998). Auditor changes and discretionary accruals. *Journal of accounting and Economics*, *25*(1), 35-67.

Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *The journal of business*, *72*(1), 1-33.

Duggal, N., He, L., & Shaw, T. S. (2025). Mandatory corporate social responsibility spending, family control, and the cost of debt. *The British Accounting Review*, *57*(4), 101356.

Eckbo, B. E., Thorburn, K. S., & Wang, W. (2016). How costly is corporate bankruptcy for the CEO?. *Journal of financial economics*, *121*(1), 210-229.

Farooq, U., Jibran Qamar, M. A., & Haque, A. (2018). A three-stage dynamic model of financial distress. *Managerial Finance*, *44*(9), 1101-1116.

Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002). The relation between auditors' fees for nonaudit services and earnings management. *The accounting review*, *77*(s-1), 71-105.

Gopalakrishnan, B., & Mohapatra, S. (2020). Insolvency regimes and firms' default risk under economic uncertainty and shocks. *Economic Modelling*, *91*, 180-197.

Gopalan, R., Mukherjee, A., & Singh, M. (2016). Do debt contract enforcement costs affect financing and asset structure?. *The Review of Financial Studies*, *29*(10), 2774-2813.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of accounting and economics*, *40*(1-3), 3-73.

Habib, A., Uddin Bhuiyan, B., & Islam, A. (2013). Financial distress, earnings management and market pricing of accruals during the global financial crisis. *Managerial Finance*, *39*(2), 155-180.

Haman, J., Lu, W., & Naidu, D. (2024). Earnings management in the post-IPO years and their impact on the long-run stock performance of foreign versus domestic IPO firms. *Accounting & Finance*, *64*(3), 2871-2913.

Harvey, P., Madison, K., Martinko, M., Crook, T. R., & Crook, T. A. (2014). Attribution theory in the organizational sciences: The road traveled and the path ahead. *Academy of Management Perspectives*, *28*(2), 128-146.

Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of accounting and economics*, *7*(1-3), 85-107.

Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting horizons*, *13*(4), 365-383.

Hill, P., Korczak, A., & Wang, S. (2019). The use of earnings and operations management to avoid credit rating downgrades. *Accounting and Business Research*, *49*(2), 147-180.

Hussainey, K. (2009). The impact of audit quality on earnings predictability. *Managerial Auditing Journal*, *24*(4), 340-351.

Jiang, J. (2008). Beating earnings benchmarks and the cost of debt. *The Accounting Review*, *83*(2), 377-416.

Jiraporn, P., Miller, G. A., Yoon, S. S., & Kim, Y. S. (2008). Is earnings management opportunistic or beneficial? An agency theory perspective. *International Review of financial analysis*, *17*(3), 622-634.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of accounting research*, *29*(2), 193-228.

Jose, J., Herwadkar, S. S., Bilantu, P., & Razak, S. A. (2020). Does greater creditor protection affect firm borrowings? Evidence from IBC. *Margin: The Journal of Applied Economic Research*, *14*(2), 212-225.

Kalbers, L. P. (2009). Fraudulent financial reporting, corporate governance and ethics: 1987-2007. Review of Accounting and Finance, 8(2), 187-209.

Kao, J. L., Wu, D., & Yang, Z. (2009). Regulations, earnings management, and post-IPO performance: The Chinese evidence. *Journal of Banking & Finance*, *33*(1), 63-76.

Khafid, M., & Arief, S. (2017). Managerial ownership, corporate governance and earnings quality: The role of institutional ownership as moderating variable. *Pertanika Journal of Social Sciences and Humanities*, *25*(5), 241-254.

Khan, M. A., & Ahmad, W. (2022). Fresh evidence on the relationship between market power and default risk of Indian banks. *Finance Research Letters*, *46*, 102360.

Kim, K. S., Lee, J. H., & Park, Y. W. (2022). Acquiring firms' earnings management in stock-for-stock mergers within Korean business groups. *Managerial Finance*, *48*(1), 27-48.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of accounting and economics*, *33*(3), 375-400.

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of accounting and economics*, *39*(1), 163-197.

Kuang, Y. F. (2008). Performance-vested stock options and earnings management. *Journal of Business Finance & Accounting*, *35*(9-10), 1049-1078.

Lalwani, D., & Jain, S. (2025). Do M&As incentivize acquirers to engage in earnings management? Evidence from an emerging economy. *Journal of Accounting Literature*.

Lalwani, D., & Jain, S. (2025). Do M&As incentivize acquirers to engage in earnings management? Evidence from an emerging economy. *Journal of Accounting Literature*.

Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of financial economics*, *69*(3), 505-527.
Li, Y., Li, X., Xiang, E., & Djajadikerta, H. G. (2020). Financial distress, internal control, and earnings management: Evidence from China. *Journal of Contemporary Accounting & Economics*, *16*(3), 100210.

Lin, J. W., & Hwang, M. I. (2010). Audit quality, corporate governance, and earnings management: A meta-analysis. *International journal of auditing*, *14*(1), 57-77.

Linden, A. (2024). XTITSA: Stata module for performing interrupted time-series analysis for panel data.

Liu, A. Z., Subramanyam, K. R., Zhang, J., & Shi, C. (2018). Do firms manage earnings to influence credit ratings? Evidence from negative credit watch resolutions. *The Accounting Review*, *93*(3), 267-298.
Louis, H. (2004). Earnings management and the market performance of acquiring firms. *Journal of financial economics*, *74*(1), 121-148.

Luo, G., Wang, K. T., & Wu, Y. (2023). Does the market reward meeting or beating analyst earnings forecasts? Empirical evidence from China. *China Accounting and Finance Review*, *25*(2), 184-219.

Mande, V., & Son, M. (2012). CEO centrality and meeting or beating analysts' earnings forecasts. *Journal of Business Finance & Accounting*, *39*(1-2), 82-112.

McNichols, M. F., & Stubben, S. R. (2008). Does earnings management affect firms' investment decisions?. *The accounting review*, *83*(6), 1571-1603.

McNichols, M. F., & Stubben, S. R. (2008). Does earnings management affect firms' investment decisions?. *The accounting review*, *83*(6), 1571-1603.

Merton, R. C. (1974). On the pricing of corporate debt: The risk structure of interest rates. *The Journal of finance*, *29*(2), 449-470.

Ming Chia, Y., Lapsley, I., & Lee, H. W. (2007). Choice of auditors and earnings management during the Asian financial crisis. *Managerial Auditing Journal*, *22*(2), 177-196.

Myers, J. N., Myers, L. A., & Omer, T. C. (2003). Exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation?. *The accounting review*, *78*(3), 779-799.

Park, S. B., Kim, S. K., & Lee, S. (2021). Earnings management of insolvent firms and the prediction of corporate defaults via discretionary accruals. *International Journal of Financial Studies*, *9*(2), 17.

Perafan-Pena, H. F., Gill-De-Albornoz, B., & Giner, B. (2022). Earnings management of target firms and deal premiums: The role of industry relatedness. *The British Accounting Review*, *54*(2), 101038.

Perry, S. E., & Williams, T. H. (1994). Earnings management preceding management buyout offers. *Journal of Accounting and Economics*, *18*(2), 157-179.

PTI. (2024, August 6). On average, resolution of cases under IBC took 716 days at NCLT in 2023–24: Govt. ET LegalWorld. https://legal.economictimes.indiatimes.com/news/law-policy/on-average-resolution-of-cases-under-ibc-took-716-days-at-nclt-in-2023-24-govt/112326165

Riyadh, H. A., Al-Shmam, M. A., & Ahmed, M. G. (2024). Empirical relationship between board characteristics, earnings management, insolvency risk, and corporate social responsibility. *Cogent Business & Management*, *11*(1), 2321300.

Renneboog, L., & Vansteenkiste, C. (2019). Failure and success in mergers and acquisitions. *Journal of Corporate Finance*, *58*, 650-699.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of accounting and economics*, *42*(3), 335-370.

Sahoo, M. S., & Guru, A. (2020). Indian insolvency law. *Vikalpa*, *45*(2), 69-78.

Sengupta, R., Sharma, A., & Thomas, S. (2016). Evolution of the insolvency framework for non-financial firms in India. *Indira Gandhi Institute of Development Research, Mumbai, WP-2016-018, June, http://www. igidr. ac. in/pdf/publication/WP-2016-018. pdf.*

Singh, R., Chauhan, Y., & Jadiyappa, N. (2022). Bankruptcy reform and corporate risk-taking: Evidence from a quasi-natural experiment. *Finance Research Letters*, *47*, 102679.

Stanga, K. G., & Kelton, A. S. (2008). An attributional analysis of ethicality judgments of earnings management. Research on Professional Responsibility and Ethics in Accounting, 13, 87-112.

Teoh, S. H., Wong, T. J., & Rao, G. R. (1998). Are accruals during initial public offerings opportunistic?. *Review of accounting studies*, *3*(1), 175-208.

Vassalou, M., & Xing, Y. (2004). Default risk in equity returns. *The journal of finance*, *59*(2), 831-868.

Vig, V. (2013). Access to collateral and corporate debt structure: Evidence from a natural experiment. *The Journal of Finance*, *68*(3), 881-928.

Watts, R. L., & Zimmerman, J. L. (1986). Positive accounting theory.

Watts, R. L., & Zimmerman, J. L. (1990). Positive accounting theory: a ten year perspective. *Accounting review*, 131-156.

Yazdanfar, D., & Öhman, P. (2020). Financial distress determinants among SMEs: empirical evidence from Sweden. *Journal of Economic Studies*, *47*(3), 547-560.

Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The accounting review*, *87*(2), 675-703.

Table 1: Evolution of Insolvency Framework in India

Law / Mechanism	Year	Applicability / Scope	Innovative Feature(s)	Limitations	Judicial / Appellate Authority
Presidency Towns Insolvency Act	1909	Applied to individuals in Presidency towns (Calcutta, Bombay, Madras)	Early codification of personal insolvency for urban regions (i.e., Calcutta, Bombay, and Madras during British rule).	Archaic, geographically limited, outdated procedures, applicable only to Individuals	High Courts
Provincial Insolvency Act	1920	Applied to individuals in non-Presidency towns	Complemented the Presidency Act to cover rural areas	Fragmented, dual laws for similar insolvency cases	District Courts
Companies Act, 1956	1956	Corporate distress, mainly liquidation	Gave a legal basis for winding up companies	Focused on liquidation rather than resolution; delays	High Courts
SICA (Sick Industrial Companies Act)	1985	Focused on the revival of sick industrial companies	Created BIFR for restructuring and rehabilitation	Very slow, misused, lacked exit options for unviable firms	BIFR, appeals to AAIFR, High Courts
RDDBFI Act (now DRT Act)	1993	Recovery of debts for banks/FIs	Set up DRTs and DRATs for quicker recovery	Delays, poor infrastructure, only financial creditors covered	DRT, DRAT
Corporate Debt Restructuring (CDR)	2001	Viable firms with multiple bank exposures	Collaborative restructuring: RBI supported	Voluntary, weak enforcement, often delayed	No direct judicial authority
SARFAESI Act	2002	Secured creditors (banks/FIs)	Allowed the enforcement of security without a court order	Did not resolve the company as a going concern; excluded unsecured and operational creditors	Appeals to DRT, DRAT
Joint Lenders' Forum (JLF)	2014	Stressed loans above ₹100 crore	Mandated lender coordination under the RBI	Ineffective due to poor consensus and enforcement	No court involvement
Strategic Debt Restructuring (SDR)	2015	Allowed conversion of debt to equity	Empowered banks to take control of companies	Banks are unwilling to run companies; poor outcomes	No court, board-driven
S4A (Sustainable Structuring of Stressed Assets)	2016	Focused on the bifurcation of debt	Aimed at sustainable restructuring for large accounts	Limited adoption; complex, voluntary	No court; RBI-led framework
Insolvency and Bankruptcy Code (IBC)	2016	Companies, LLPs, individuals (comprehensive)	Unified, time-bound, creditor-in-control, moratorium, IP-led	NCLT delays, evolving jurisprudence, capacity gaps	NCLT, NCLAT, appeals to the Supreme Court

Table 2: Variable Description

Symbol	Variables	Definition
AEM-J	Main Dependent Variable (DV)	Signed Discretionary Accruals Earnings management(AEM) by Jones, 1991(AEM-J) model
AEM-D	Alt measure - DV	Signed Discretionary Accruals Earnings management by Dechow et al. (1995) model (AEM-D)
AEM-K	Alt measure - DV	Signed Discretionary Accruals Earnings management by Kothari et al. (2005) model (AEM-K)
POST	Time variable	Post is equal to 1 if year>2017 and 0 otherwise
HDR_X_POST	Main Independent Variable	Interaction of post with Main Treatment Variable
HDR	Main Treatment Variable (TV)	Accumulated losses>= 50% of average net worth in the immediately preceding 4 FYr. If year <2017 as 1, else 0.
HDR - B	Alt measure - TV	Accumulated losses>= 50% of average net worth in the immediately preceding 4 FYr. as 1 else 0 (Bose et al., 2021; Senapati & Ghosal, 2016).
HDR - R	Alt measure - TV	Firm credit rating provided by credit rating agencies. The rating grades are converted to rating numbers such that: 1= Highest Safety, 2= High Safety, 3= Adequate safety, 4= Moderate safety, 5=Inadequate safety, 6= High risk, 7= Substantial risk, and 8= Default. (Jiang, 2008; Duggal, He, & Shaw, 2024)
HDR - Zscr3	Alt measure - TV	If Altman z score <1.81 in the immediately preceding Three F.Yrs. & If year <2017 as 1 else 0. (Altman (1983, pp. 122))
HDR - Zscr4	Alt measure - TV	If Altman z score <1.81 in the immediately preceding Four F.Yrs. & If year <2017 as 1 else 0. (Altman (1983, pp. 122))
HDR - KMV	Alt measure - TV	Based on Vassalou and Xing (2004), Bharath and Shumway (2008), Khan and Ahmad (2022) and Merton (1974) model
Control Variables		
TobinsQ	TobinsQ	Market value of equity plus book value of debt/total asset
Ncfota	Ncfota	Net cash flow from operations scaled by total assets
Current Ratio	Current Ratio	Current assets minus Current Liabilities (winsorized)
Firm age	Firm age	Natural logarithm of the number of years since incorporation.
Firm size	Firm size	Natural logarithm of total asset
LTBTA	LTBTA	Long-term Borrowings scaled upon total assets
Export Intensity	Export Intensity	Total exports divided by total Sales (Valiya Purayil, & Lukose(2022).
Tangibility	Tangibility	Net Fixed assets (PPE) scaled by total assets.
lCGIndex	lCGIndex	Lagged value of CGI index (details of index mentioned in Table below)
Degree of indebtedness	Degree of indebtedness	Current liabilities / Current assets

Table 3: Descriptive Statistics

	Before (2012-2016)								After (2017-2023)							
	Treatment firms				Control firms				Treatment firms				Control firms			
Variables	Mean	Std.dev	Min	Max	Mean	Std.dev	Min	Max	Mean	Std.dev	Min	Max	Mean	Std.dev	Min	Max
Signed EM	-0.01	0.12	-0.44	0.96	0	0.06	-0.44	0.96	0.02	0.18	-0.44	0.96	0	0.09	-0.44	0.96
HDF × POST	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0
TobinsQ	1.13	2.14	0	69.62	1.12	1.65	0	48	2.26	10.81	0	627.07	1.53	2.25	0	64.27
Ncfota	0.05	0.21	-3.57	4.31	0.07	0.09	-0.55	1.4	0.01	1.34	-110.5	14.13	0.05	0.25	-20.56	10.08
lCGIndex	9.8	5.01	0	21	11.35	4.38	0	22	13.09	5.78	0	23	14.87	4.26	0	22
CR	2.88	11.1	0.01	115.6	2.56	6.24	0.02	115.6	4.82	14.57	0.01	115.6	4.37	12.26	0.01	115.6
Degree of indebtedness	3.2	34.33	0	1613.83	0.75	0.79	0	42	14.57	506.08	-0.01	24084	0.84	2.77	0	209
LTBTA	0.37	0.89	0	20.07	0.13	0.13	0	0.69	0.39	3.76	0	209.5	0.1	0.15	0	4.08
Export Intensity	11.6	22.88	0	100	18.39	26.49	0	100	5.35	17.23	0	100	7.5	19.64	0	100
Firm age	3.12	0.69	0.69	4.8	3.38	0.53	1.39	5.03	3.1	0.67	0.69	4.85	3.47	0.58	0	5.08
Firm size	7.22	1.82	1.92	13.33	8.25	1.73	3.81	15.39	6.62	2.1	-0.92	13.42	8	2.08	-0.36	16.09
No of Obs	2,747				7483				7454				13660			

Table 4: Corporate Governance Index for Indian Firms

Board Features	The chairman of the board is an independent director
	More than 50% of the board should be independent director after excluding the chairman of the board
	Board should have optimum size between 25-75 percentile of the industry distribution
	The board should have one-woman independent director
	Independents directors average tenure in the firm should be less than the average tenure of the independent director of the industry
	The total number of board meeting for a firm in a given year more than the industry average
	The average proportion of the board meeting attended by the directors, beside the CEO and Chairperson, is more than the industry average
	Proportion of active directors in the board. A director is active if a. They have attended more than 75% of the board meeting b. Attended the AGM c. If they are member of any subcommittee of the board beside being just a board member.
	Proportion independent director tenure is more than CEO tenure is more than the Industry average
Nomination Committee	The company has a nomination committee for the given year
	The majority of the nomination committee are independent directors Or the proportion of independent director of the nomination committee is more than the industry average proportion of independent director in the nomination committee
	The chairman of the nomination committee is an independent director
Remuneration Committee	The company have a renumeration committee or not
	Chairman of the remuneration committee is an independent director
	All members of the remuneration committee are independent directors Or Proportion of independent directors in the remuneration committee is more than the industry average
Audit Committee	The company has an audit committee or not.
	Total number of audit committee member should be more than 3
	CEO should not be a member of the audit committee
	All the members of the audit committee are independent directors
	All member of the audit committee is an independent director
	The chairman of the audit committee, nomination committee, and the remuneration are present in the AGM to answer another shareholders query

Table 5: Impact of IBC on the Earning Management of High-Distressed Firms (All types)

VARIABLES	Unsigned EM (1)	Signed EM (2)	All +ve (3)	All -ve (abs values) (4)
HDF × POST	0.007*	0.017***	0.011***	-0.005***
	(0.004)	(0.004)	(0.003)	(0.002)
TobinsQ	0.001**	-0.003***	-0.001***	0.002***
	(0.001)	(0.001)	(0.000)	(0.000)
Ncfota	-0.005	-0.034***	-0.021***	0.013***
	(0.004)	(0.007)	(0.005)	(0.002)
lCGIndex	-0.002***	-0.002***	-0.002***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
CR	0.000	0.001***	0.001***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Degree of indebtedness	0.000***	-0.000***	-0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
LTBTA	-0.002	-0.000	-0.001	-0.001
	(0.002)	(0.003)	(0.002)	(0.001)
Export Intensity	0.000	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Firm age	-0.057***	-0.044***	-0.047***	-0.003
	(0.013)	(0.012)	(0.012)	(0.004)
Firm size	0.003	0.028***	0.016***	-0.012***
	(0.004)	(0.004)	(0.003)	(0.001)
post	-0.004	-0.002	-0.007	-0.005
	(0.023)	(0.025)	(0.021)	(0.011)
Constant	0.241***	-0.032	0.089*	0.121***
	(0.054)	(0.051)	(0.046)	(0.019)
Observations	31,344	31,344	31,344	31,344
R-squared	0.054	0.073	0.063	0.060
Number of Firms	3,627	3,627	3,627	3,627
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Table 5 reports the effect of the Insolvency and Bankruptcy Code (IBC) 2016 on the earnings management behavior of high-default-risk (HDF) firms. Column (1) uses unsigned EM, measured as the absolute value of discretionary accruals, while Column (2) presents results using signed earnings management as the dependent variable. Column (3) focuses on positive residuals, setting negative residuals to zero, thereby isolating income-increasing EM. Column (4) focuses on negative residuals, converting them to absolute values while setting positives to zero, thereby isolating income-decreasing EM. The variable HDF equals 1 if a firm's accumulated losses in a given year are at least 50% of its average net worth over the preceding four years (pre-2017), and 0 otherwise. POST equals 1 for the period after the IBC's enactment. CGIndex is a composite measure of corporate governance quality based on five board-level attributes. All regressions control for firm-level covariates and include year, firm, and industry-by-year fixed effects. Robust standard errors are clustered at the firm level. The sample covers all NSE- and BSE-listed firms from 2013–2023.

Table 6 : Impact of IBC on the Earning Management of High-Distressed Firms

Panel A: Impact of IBC on the Earning Management of High-Distressed Firms from 2013-2023

	Overall Sample		Listed Firms		Unlisted Firms	
VARIABLES	(1)	(2)	(1)	(2)	(1)	(2)
HDF_X_POST	0.017***	0.017***	0.016***	0.016***	0.013	0.015
	(0.004)	(0.004)	(0.004)	(0.004)	(0.010)	(0.010)
TobinsQ	-0.003***	-0.003***	-0.004***	-0.004***	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ncfota	-0.034***	-0.034***	-0.035***	-0.035***	-0.070	-0.067
	(0.007)	(0.007)	(0.007)	(0.007)	(0.052)	(0.052)
lCGIndex	-0.002***	-0.002***	-0.001***	-0.001***	-0.004***	-0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
CR	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Degree of indebtedness	-0.000***	-0.000***	-0.000***	-0.000***	-0.000	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LTBTA	-0.000	-0.000	0.001	0.001	-0.006	-0.007
	(0.003)	(0.003)	(0.003)	(0.003)	(0.010)	(0.009)
Export Intensity	-0.000	-0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm age	-0.048***	-0.044***	-0.006	-0.007	-0.070***	-0.066***
	(0.012)	(0.012)	(0.011)	(0.012)	(0.021)	(0.022)
Firm size	0.027***	0.028***	0.018***	0.018***	0.058***	0.063***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.009)	(0.009)
post	0.015**	-0.002	0.001	-0.016	0.021	0.040
	(0.006)	(0.025)	(0.006)	(0.024)	(0.018)	(0.074)
Constant	-0.030	-0.046	-0.102**	-0.102**	-0.174**	-0.207***
	(0.045)	(0.046)	(0.047)	(0.049)	(0.074)	(0.075)
Observations	31,344	31,344	24,708	24,708	6,636	6,636
R-squared	0.044	0.073	0.040	0.075	0.077	0.158
Number of Firms	3,627	3,627	2,550	2,550	1,105	1,105
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE × Year FE	No	Yes	No	Yes	No	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Panel B: Impact of IBC on the Earning Management of High-Distressed Firms from 2013-2020 (Pre-covid)

	Overall Sample		Listed Firms		Unlisted Firms	
VARIABLES	(1)	(2)	(1)	(2)	(1)	(2)
HDF_X_POST	0.013***	0.012***	0.013***	0.013***	0.012	0.015
	(0.004)	(0.004)	(0.005)	(0.004)	(0.010)	(0.010)
TobinsQ	-0.001	-0.001	-0.000	-0.000	-0.003	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)
Ncfota	-0.139***	-0.140***	-0.121***	-0.122***	-0.264***	-0.263***
	(0.026)	(0.026)	(0.027)	(0.027)	(0.046)	(0.048)
lCGIndex	-0.002***	-0.002***	-0.001***	-0.001***	-0.003***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
CR	0.001***	0.001***	0.001***	0.001***	0.001**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Degree of indebtedness	-0.000***	-0.000***	-0.000***	-0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

LTBTA	-0.004	-0.005	-0.005	-0.005*	0.002	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.014)	(0.014)
Export Intensity	0.000	0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm age	-0.066***	-0.054***	-0.018	-0.007	-0.070***	-0.067***
	(0.014)	(0.014)	(0.018)	(0.016)	(0.023)	(0.024)
Firm size	0.021***	0.021***	0.019***	0.018***	0.029**	0.035**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.014)	(0.014)
post	0.008	-0.029	-0.005	-0.041	0.006	0.064
	(0.005)	(0.029)	(0.006)	(0.028)	(0.015)	(0.062)
Constant	0.073	0.035	-0.071	-0.104	0.019	-0.033
	(0.056)	(0.057)	(0.071)	(0.068)	(0.104)	(0.101)
Observations	22,028	22,028	17,688	17,688	4,263	4,263
R-squared	0.079	0.117	0.076	0.121	0.115	0.213
Number of Firms	3,496	3,496	2,506	2,506	981	981
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE × Year FE	No	Yes	No	Yes	No	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Panel A represents the sample period from 2013 to 2023. HDR is coded as 1 if a firm's accumulated losses in a given year equal or exceed 50% of its average net worth over the preceding four financial years before 2017 and 0 otherwise. CGIndex is a corporate governance index created based on five board-level characteristics to check the stringency of the board on the firm.

Table 7: Corporate Governance and Impact of IBC on the Earning Management of High-Distressed Firms (All Types)

VARIABLES	Signed (1)	Unsigned (2)	All pos (3)	All Neg (absolute values) (4)
HDF × POST	0.039***	0.026**	0.031***	-0.008**
	(0.010)	(0.010)	(0.009)	(0.004)
HDF × POST × lCGIndex	-0.002**	-0.001**	-0.001**	0.000
	(0.001)	(0.001)	(0.001)	(0.000)
Observations	31,344	31,344	31,344	31,344
R-squared	0.073	0.054	0.063	0.060
Number of Firms	3,627	3,627	3,627	3,627
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: The sample period is from years 2013-2023. HDR is coded as 1 if a firm's accumulated losses in a given year equal or exceed 50% of its average net worth over the preceding four financial years before 2017 and 0 otherwise. CGIndex is a corporate governance index created based on five board-level characteristics to check the stringency of the board on the firm. All controls were included in this estimation. Column (1) presents results using signed earnings management as the dependent variable, while Column (2) uses unsigned EM, measured as the absolute value of discretionary accruals. Column (3) focuses on positive residuals, setting negative residuals to zero, thereby isolating income-increasing EM. Column (4) focuses on negative residuals, converting them to absolute values while setting positives to zero, thereby isolating income-decreasing EM.

Table 8: Corporate Governance and Impact of IBC on the Earning Management of High-Distressed Firms

VARIABLES	Overall Sample (1)	Listed Firms (2)	Unlisted Firms (3)
HDR_X_POST	0.039***	0.026*	0.030*
	(0.010)	(0.015)	(0.016)
HDR_X_POST_X_lCGIndex	-0.002**	-0.001	-0.001
	(0.001)	(0.001)	(0.001)
Observations	31,344	24,708	6,636
R-squared	0.073	0.076	0.158
Number of Firms	3,627	2,550	1,105
Year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Industry FE	No	No	No
Industry FE_X_Year FE	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: The sample period is from 2013 to 2023. HDR is coded as 1 if a firm's accumulated losses in a given year equal or exceed 50% of its average net worth over the preceding four financial years before 2017 and 0 otherwise. CGIndex is a corporate governance index created based on five board-level characteristics to check the stringency of the board on the firm. All controls were included in this estimation.

Table 9: Moderating Effects of Family-Controlled and Family-Managed Firms on the Post-IBC Earnings Management

	Signed EM			
VARIABLES	**(1)**	**(2)**	**(3)**	**(4)**
HDF × POST	0.020***	0.018***	0.018***	0.015***
	(0.005)	(0.006)	(0.007)	(0.005)
HDF × POST × FCFM	-0.010**			
	(0.004)			
HDF × POST × FC		-0.004		
		(0.005)		
HDF × POST × FM			-0.008	
			(0.006)	
HDF × POST × FCNFM				0.004
				(0.005)
FCFM	0.002			
	(0.001)			
FC		0.001		
		(0.001)		
FM			0.000	
			(0.002)	
FCNFM				-0.000
				(0.002)
Constant	-0.129**	-0.128**	-0.081	-0.128**
	(0.064)	(0.064)	(0.069)	(0.064)
Observations	30,671	30,671	23,040	30,671

R-squared	0.087	0.087	0.107	0.087
Number of Firms	2,399	2,399	2,105	2,399
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

This table reports the moderating effects of family-controlled and family-managed (FCFM), family-controlled (FC), family-managed (FM), and family-controlled but non-family-managed (FCNFM) on the relationship between high default firms (HDF) post-IBC implementation and earnings management. All models include year, firm, and industry-year fixed effects, as well as control variables.

Table 10: RDD Estimation with different bandwidths

	(1)	(2)	(3)	(4)
VARIABLES	B_0.05	B_0.075	B_0.3	B_0.5
HDR × POST	0.019**	0.014**	0.008*	0.009**
	(0.009)	(0.006)	(0.005)	(0.005)
TobinsQ	0.007	-0.000	0.001	0.001
	(0.005)	(0.003)	(0.001)	(0.001)
Currentratio	-0.001**	-0.001	0.001**	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Degree of indebtness	0.001	0.001	-0.000***	-0.000***
	(0.001)	(0.001)	(0.000)	(0.000)
Firmage	-0.075***	-0.054***	-0.023**	-0.025**
	(0.021)	(0.018)	(0.011)	(0.011)
Firm size	0.017	0.015**	0.015***	0.013***
	(0.012)	(0.007)	(0.003)	(0.003)
lCGIndex	0.000	-0.000	-0.000*	-0.000*
	(0.001)	(0.000)	(0.000)	(0.000)
Constant	0.096	0.057	-0.040	-0.022
	(0.104)	(0.074)	(0.042)	(0.041)
Observations	2,283	4,705	20,486	21,716
R-squared	0.273	0.166	0.065	0.059
Number of Firms	227	455	1,891	2,012
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses ***p<0.01, ** p<0.05, * p<0.1 All regressions control for firm-level covariates and include year, firm, and industry-by-year fixed effects. Robust standard errors are clustered at the firm level.

Table 11: Mahalanobis Matched Sample

VARIABLES	AEM - D
HDR × POST	0.008*
	-0.004
Observations	6,585
Number of Firms	634
Controls	Yes
Year FE	Yes
Firm FE	Yes
Industry FE	No
Industry FE × Year FE	Yes

Robust standard errors in parentheses ***p<0.01, ** p<0.05, * p<0.1

Table 12: Matched Sample T-Test Results

T-Test Results

	mean	se	p-value	N
NCFOTA	0.004	0.975	0.330	634
Firm size	0.121	1.012	0.312	634
Export intensity	1.087	0.700	0.484	634

Robust standard errors in parentheses ***p<0.01, ** p<0.05, * p<0.1

Table 13: Corporate Governance and Impact of IBC on the Earning Management of High-Distressed Firms (Removed IPO & Merged Firms)

VARIABLES	**Overall Sample** (1)	**Listed Firms** (2)	**Unlisted Firms** (3)
HDR × POST	0.039***	0.032*	0.054**
	(0.013)	(0.016)	(0.024)
HDR × POST × lCGIndex	-0.002**	-0.001	-0.002*
	(0.001)	(0.001)	(0.001)
Observations	28,015	23,856	4,159
R-squared	0.075	0.078	0.210
Number of Firms	3,064	2,443	646
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry FE × Year FE	Yes	Yes	Yes

Robust standard errors in parentheses ***p<0.01, ** p<0.05, * p<0.1

Table 14: Impact of Default risk on EM of Indian firms post IBC (Using Alt Treatment measures)

VARIABLES	Signed EM			
	(1)	(2)	(3)	(4)
HDR – R	0.013*			
	(0.007)			
HDR – KMV		0.021**		
		(0.009)		
HDR - Zscr3			0.006**	
			(0.003)	
HDR - Zscr4				0.007**
				(0.003)
Observations	9,972	10,704	31,344	31,344
Number of Firms	1,115	2,367	0.072	0.072
R-squared	0.113	0.154	3,627	3,627
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses ***p<0.01, ** p<0.05, * p<0.1
In all estimations, we included all control variables mentioned in Table 1.

Table 15: Results of Interrupted time series analysis

VARIABLES	Overall Sample 2013-2023	Balanced Data Pre-COVID-2020	
		Fixed Effects	ITSA
Treat × Post	0.007	0.038**	0.024**
	(0.011)	(0.019)	(0.010)
Treat × Time	0.002	-0.004	-0.003
	(0.002)	(0.003)	(0.002)
Post × Time	-0.001***	-0.001	0.001
	(0.000)	(0.001)	(0.001)
Treat × Post × Time	-0.000	-0.002	-0.004
	(0.003)	(0.004)	(0.004)
Time	0.003***	0.001	-0.001
	(0.001)	(0.001)	(0.001)
Treat			-0.000
			(0.005)
Post			0.000
			(0.002)
Constant	-0.047	-0.110	-0.001
	(0.033)	(0.070)	(0.001)
Observations	29,483	12,064	13,572
Number of Firms	3,625	1,508	1,508
R-squared	0.046	0.075	
Controls	Yes	Yes	Yes
Year FE	Yes	No	No
Firm FE	Yes	Yes	No
Year FE	No	Yes	No

Industry FE	No	No	No
Industry FE × Year FE	No	No	No

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 16: Sector-wise Analysis of Earnings Management: Manufacturing vs. Non-Manufacturing Firms

	Overall Sample		Listed Firms	
VARIABLES	**Manf**	**Non Manf**	**Manf**	**Non Manf**
	(1)	(2)	(3)	(4)
HDF × POST	0.011***	0.023***	0.022***	0.012**
	(0.004)	(0.007)	(0.007)	(0.005)
Constant	-0.000	-0.070	-0.175**	0.010
	(0.057)	(0.068)	(0.078)	(0.065)
Observations	16,752	14,592	10,409	14,299
R-squared	0.045	0.102	0.105	0.070
Number of Firms	1,587	2,040	1,271	1,279
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 17: Sector-wise Earnings Management and the Mediating Role of Corporate Governance

	Overall Sample		Listed Firms	
VARIABLES	**Manf**	**Non Manf**	**Manf**	**Non Manf**
	(1)	(2)	(3)	(4)
HDF × POST	0.020**	0.052***	0.043**	0.011
	(0.010)	(0.016)	(0.020)	(0.022)
HDF × POST × lCGIndex	-0.001	-0.002**	-0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Constant	-0.002	-0.077	0.008	-0.177**
	(0.057)	(0.068)	(0.065)	(0.077)
Observations	16,752	14,592	14,299	10,409
R-squared	0.045	0.102	0.071	0.105
Number of Firms	1,587	2,040	1,279	1,271
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 18: Sub-Sample analysis of Capital-intensive vs Non-Capital-intensive firms

VARIABLES	Cap intensive	Cap intensive_int	Not Cap intensive	Not Cap intensive_int
	(1)	(2)	(3)	(4)
HDF_X_POST	0.009*	0.031**	0.021***	0.044***
	(0.005)	(0.015)	(0.005)	(0.013)
HDF_X_POST_X_lCGIndex		-0.039*		-0.039*
		(0.022)		(0.020)
Observations	12,256	12,256	19,088	19,088
R-squared	0.085	0.085	0.074	0.074
Number of Firms	1,292	1,292	2,335	2,335
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 19: Sub-Sample analysis of Debt-oriented firms vs Non Debt-oriented firms.

VARIABLES	Debt intensive	Debt intensive_int	Not Debt intensive	Not Debt intensive_int
	(1)	(2)	(3)	(4)
HDF_X_POST	0.013***	0.031***	0.019***	0.046***
	(0.004)	(0.011)	(0.006)	(0.016)
HDF_X_POST_X_lCGIndex		-0.030*		-0.047*
		(0.018)		(0.024)
Observations	16,256	16,256	15,088	15,088
R-squared	0.071	0.071	0.082	0.083
Number of Firms	1,710	1,710	1,917	1,917
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 20: External Commercial Borrowings (ECB) VS Non-External Commercial Borrowings (NECB)

VARIABLES	Overall Sample		Listed Firms	
	ECB	NECB	ECB	NECB
	(1)	(2)	(3)	(4)
HDF × POST	0.020***	0.016***	0.018**	0.018**
	-0.007	-0.004	-0.008	-0.008
Observations	4,787	26,557	4,333	20,375
R-squared	0.065	0.045	0.065	0.041
Number of Firms	425	3,202	375	2,175
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 21: Sector-wise EM and the Mediating Role of Corporate Governance of Firms with ECB VS NECB

VARIABLES	Overall Sample		Listed Firms	
	ECB=1	ECB=0	ECB=1	ECB=0
	(1)	(2)	(3)	(4)
HDF × POST	0.026	0.036***	0.014	0.024
	-0.02	-0.01	-0.026	-0.016
HDF × POST × lCGIndex	0	-0.002**	0	-0.001
	-0.001	-0.001	-0.002	-0.001
Observations	4,787	26,557	4,333	20,375
R-squared	0.21	0.076	0.218	0.078
Number of Firms	425	3,202	375	2,175
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry FE × Year FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

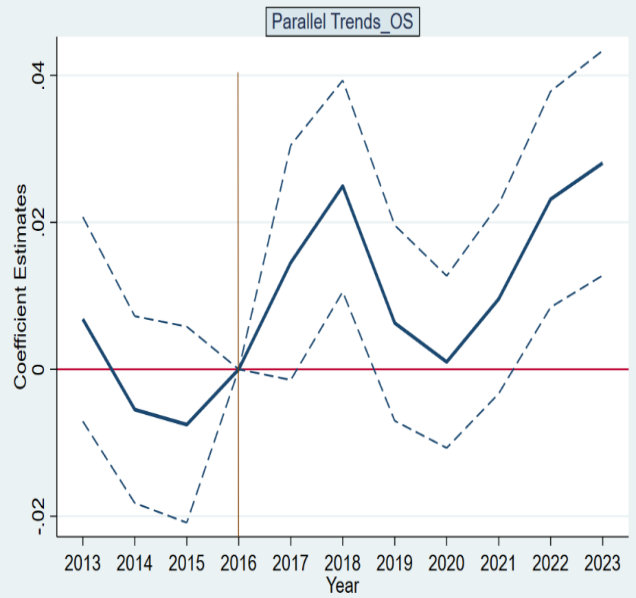

Figure 1.1: Parallel Trends for Overall Sample

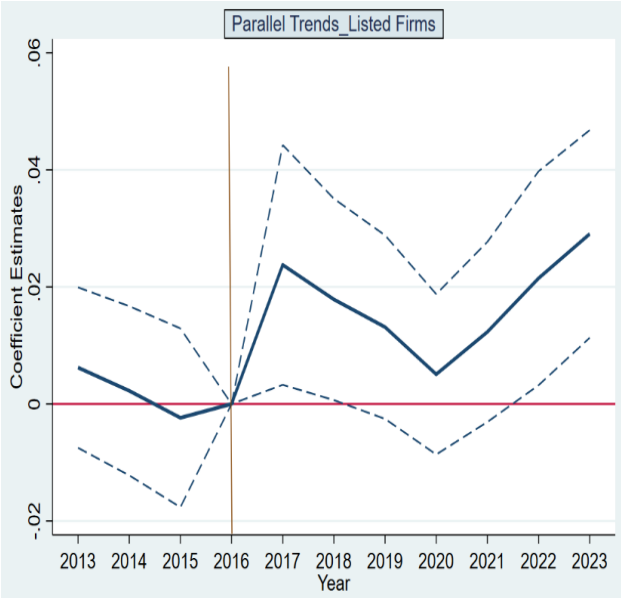

Figure 1.2: Parallel Trends for Listed Firms

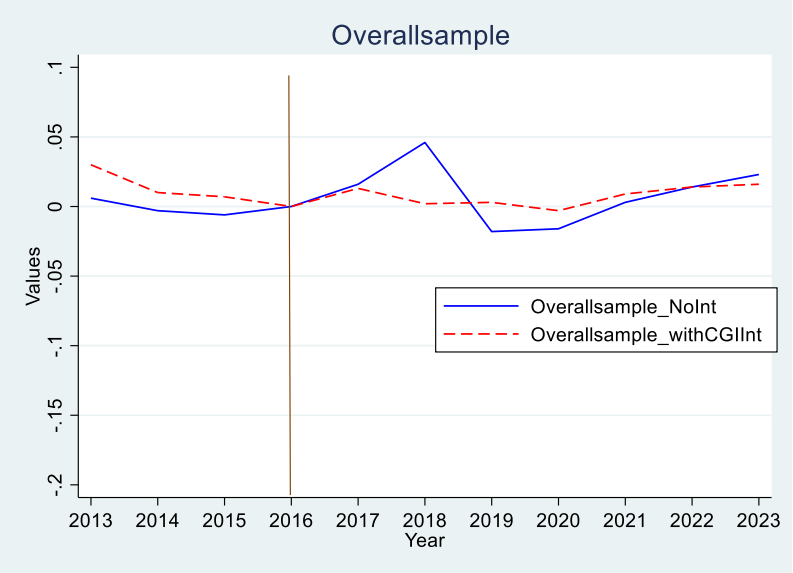

Figure 2 Triple Interaction Effect

Figure 3: Regression Discontinuity Plot

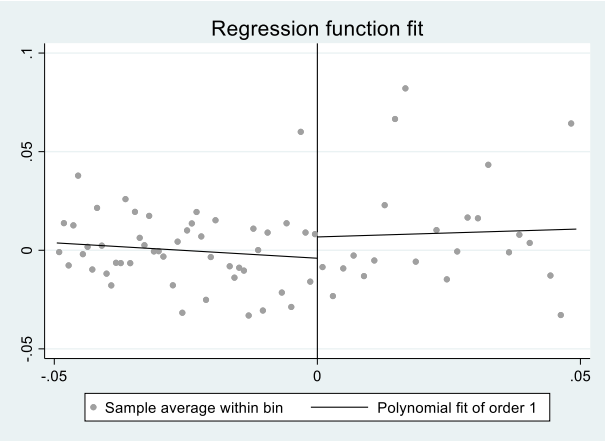

Figure 3.1 RD Plot with Bandwidth 0.05

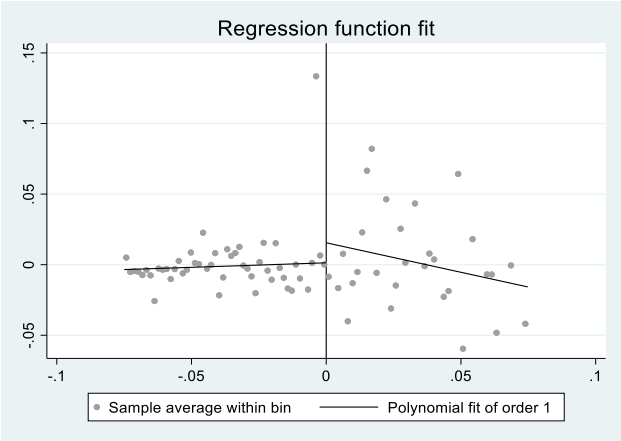

Figure 3.2 RD Plot with Bandwidth 0.075

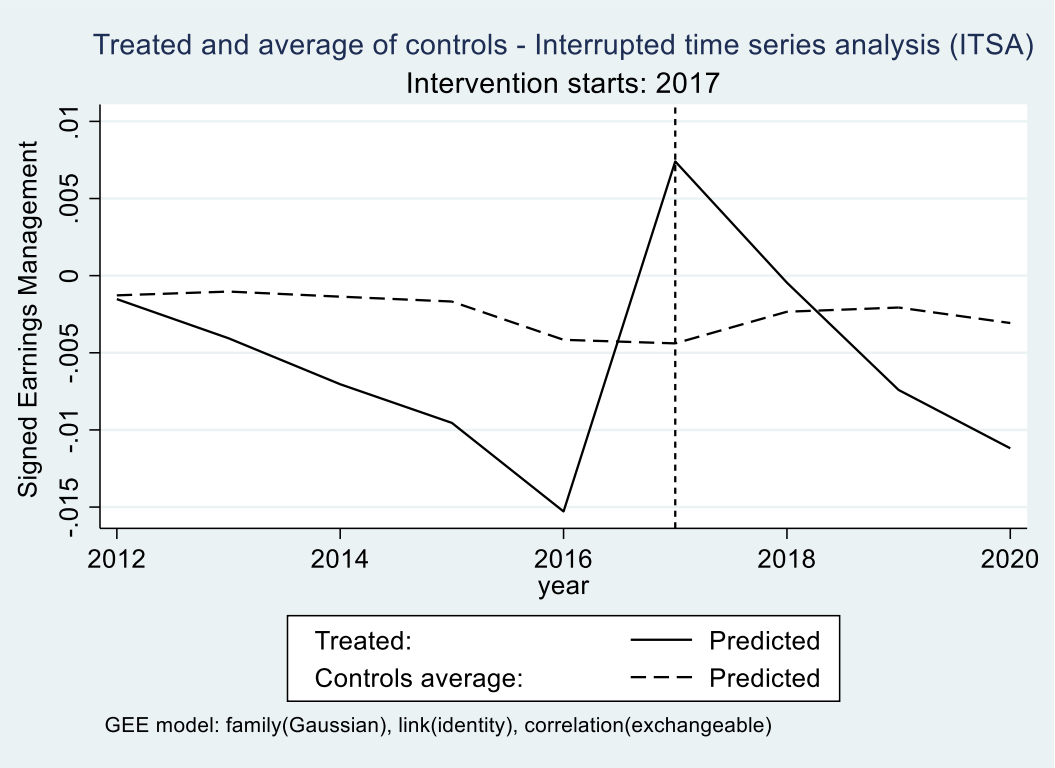

Figure 4. Interrupted time series analysis trend graph