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Earnings management contagion: evidence from institutional equivalence

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Abstract

Purpose – The study aims to investigate how the presence and absence of institutional equivalents (interaction of industry peers and local peers) affect the earnings management practices of firms.

Design/methodology/approach – The study uses discretionary accruals to operationalize earnings management. A sample of 18,744 Bombay Stock Exchange (BSE) listed firm years spanning over 12 financial years (March 2010–March 2021) has been considered and analyzed through panel data regression models.

Findings – The author's results show that the earnings management practices of a firm's institutional equivalents and the firm's own earnings management are positively associated, implying that firms closely follow their institutional equivalents. This association is found to be more pronounced among focal firms when the difference between the earnings management levels of industry peers and local peers is greater. Further, the author find that large firms aggressively imitate their industry peers and local peers, whereas profitability does not influence their imitation behavior.

Practical implications – The author's findings have implications for understanding peer imitation processes, particularly when firms face increasingly multifaceted institutional environments. It suggests auditors and analysts take into account the earnings management practices of local and industry peers while analyzing the client's financial statements and making forecasts, respectively.

Originality/value – The study is among the pioneering attempts to explore the domain of earnings management from the lens of institutional equivalence and provides compelling evidence that the interaction of industry peers and local peers impacts the earnings management practices of firms.

Keywords Institutional theory, Institutional fields, Earnings management, India

Paper type Research paper

1. Introduction

Prior studies document that firms follow the practices of their peers (for instance, Rao *et al.*, 2001; Leary and Roberts, 2014; Machokoto *et al.*, 2021). In particular, industry peers and local peers are documented as the most important reference groups (Raffaelli *et al.*, 2013). Firms that belong to the same industry and the firms operating in the same geographic location are more likely to imitate each other (Christopher and Tilcsik, 2016; Singh *et al.*, 2021). This interaction is referred to as "*institutional equivalence*" in the strategic management literature.

It has been found that firms having common industry membership imitate their peers in terms of organizational name and structure (Glynn and Abzug, 2002), social responsibility practices (Raffaelli and Glynn, 2014) and investment policies (Peng *et al.*, 2021). Furthermore, research has shown that firms with the same headquarters city imitate each other (Marquis and Battilana, 2009) in terms of tax-avoidance practices (Liang *et al.*, 2021; Almandoz, 2012). Although these are important imitations that stakeholders should know, whether firms imitate their industry and local peers in terms of earnings management is still an unexplored

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research question. Although a plethora of studies is available on earnings management (for instance, Dechow *et al.*, 2010; Kothari *et al.*, 2005), the literature is silent on the impact of institutional equivalents on earnings management. The issue of institutional equivalents in earnings management is important because firms are more likely to imitate the earnings management practices of their peers due to their common mandatory disclosure requirements and the same financial reporting framework. The issue is important for investors, auditors and analysts because they form their decision based on the firm's reported numbers. Auditors must know the influence of local peers and industry peers on the earnings management practices of their client firms as it provides them greater ease in identifying suspected firms.

The main theoretical underpinning behind the research question is derived from the institutional theory that states that firms look to their peers for cues to appropriate behavior (Peters, 2022). The theory laid greater emphasis on the imitating behavior of firms in case of uncertainty. Hence, it is likely that firms imitate their peers in terms of earnings management, and this effect is likely to be more pronounced when they belong to the same industry and share a common geographic location. We investigate the issue under the Indian institutional settings because the simultaneous influence of the industry and local institutional cues are relatively clearer and readily analyzable for Indian firms from the Centre for Monitoring Indian Economy Limited's database. Also, the earnings management practices are found to be higher among Indian firms after the mandatory adoption of International Financial Reporting Standards (IFRS) (Adhikari *et al.*, 2021; Bansal and Garg, 2021) and mandatory corporate social responsibility spending of 2% (Bansal and Kumar, 2021). In addition, Indian firms follow their industry and local peers in their corporate decisions (Singh *et al.*, 2021). Hence, India provides us with unique institutional settings to explore the impact of institutional equivalence on earnings management.

Based on a sample of 18,744 Bombay Stock Exchange (BSE) firm years, we find a statistically significant relationship between the earnings management of a firm's institutional equivalents and the firm's own earnings management, implying that firms closely follow their institutional equivalents. This association is found to be more pronounced among focal firms when the difference between the earnings management levels of industry peers and local peers is greater. Further, we find that under the situation of no institutional equivalents, large firms are more likely to imitate their industry and local peers, whereas the return on assets (profitability) does not influence the imitation behavior of focal firms. These results are robust to the alternative measurement of earnings management.

The study contributes to the literature in the following ways. First, the study unpacks the unexplored domain of earnings management, i.e. the joint impact of industry peers and local peers (institutional equivalence) on the earnings management practices of the focal firm. Hence, the study is among the earlier attempts to introduce the concept of institutional equivalence in earnings management and show that when institutional equivalents exist, they serve as an obvious reference category such that firms will pay relatively little attention to other peers with which they share only a single field for the earnings management. In other words, they study document "institutional equivalent" as an important determinant of earnings management. Second, the study extends the earnings management literature in India, where a majority of studies have examined firm-specific factors and largely ignore the contagion effects of earnings management. The current study responds to the research call made by Da Silva *et al.* (2021) on examining the impact of the contagion effect on earnings management practices in emerging markets such as India. Our findings have important practical implications for auditors, and analysts to take into account the earnings management practices of local peers and industry peers while analyzing the client's financial statements.

We organize the rest of the study as follows. Section 2 covers a detailed discussion of the theoretical framework and develops the arguments for the hypotheses. The research design is explained in Section 3. The empirical results are discussed in Section 4. Section 5 concludes the study with a discussion, limitations and suggestions for future lines of research.

2. Theoretical framework and hypotheses development

Stakeholders obtain information about the firm's operating, investing and financial activities from their core capsules (income statement, the balance sheet and cash flow statement). Stakeholders form their decision based on reported metrics in these statements. Different stakeholders such as investors, creditors, lenders and customers use different metrics depending upon their objectives (Bansal *et al.*, 2022). Hence, the quality of information disclosed in the financial statements is important for the effective decision-making of stakeholders. Under a corporate lens, managers and shareholders are two distinct entities, where managers have more sensitive information than shareholders due to their close monitoring of business activities. Hence, they are likely to take leeway of this information for self-interest (the agency theory). They are likely to report the figures that serve their private purposes. For any misreporting, firms must have significant incentives and sufficient opportunities, consistent with the fraud triangle theory (Cressey, 1950).

Earnings management is defined as a practice under which managers manipulate accounting numbers either to mislead some stakeholders about the financial or operating performance of firms or to fulfill their contractual obligations that depend upon earnings disclosed in the income statement (Healy and Wahlen, 1989). The incentives behind earnings management are well articulated in the accounting literature by Watts and Zimmerman (1990) under the positive accounting theory (PAT). Three hypotheses are postulated under the PAT, namely, the bonus plan hypothesis, debt covenants hypothesis and political cost hypothesis. Under the bonus plan hypothesis, managers manipulate the earnings upward to increase their remuneration. Under the debt covenants hypothesis, firms have the incentive to report inflated earnings to avoid the violation of debt covenants. However, on the contrary, under the political cost hypothesis, firms report deflated earnings to reduce political risks and political costs. Another set of incentives emerges from the capital market incentives, where firms are incentivized to report favorable financial and operating performance to meet or beat the analyst's sales forecasts. Firms are rewarded by the market in the form of higher valuations when they meet or beat forecasts (Kasznik and McNichols, 2002). Apart from incentives, the flexibility under the domestic accounting standards (generally accepted accounting principles) or adoption of a converged form of IFRS provides greater leeway for recoding the items in the financial statements.

Social interactions constitute an important domain of the economics' discipline. Individuals and firms do not operate in isolation. As a result, social interactions can affect decision-making and the allocation of resources. Manski (2000) characterizes an action of an economic agent as affecting the actions of other agents through three channels: constraints, expectations and preferences. First, the actions of other economic agents can affect the array of choices available to an individual agent. Second, an agent forming expectations can learn from actions chosen by others. Third, firms prefer the action based on available opportunities and incentives. Building on the same channels, research highlights the role of peer firms in shaping corporate policies. For instance, Leary and Roberts (2014) find that firms respond to the financing decisions of peer firms, respond to precautionary cash holding practices (Hoberg *et al.*, 2014), CEO hiring decisions (Yonker, 2016) and fraudulent financial misreporting and misconduct (Parsons *et al.*, 2018).

Although the existing studies have documented the influence of a single field, i.e. either industry peers' influence or local peers' influence (Peng *et al.*, 2021; Marquis and Battilana, 2009; Liang *et al.*, 2021; Almandoz, 2012), the current study aims at proposing the critical factor that shapes the firm's imitation behavior based on the multiple fields (that is common

area or interaction between industry peers and local peers). The current study theorizes the presence and absence of institutional equivalents on the imitation behavior of focal firms. The study posits that if the industry peers and local peers individually influence the behavior then it is likely that the joint impact results in a more influential role in terms of imitation. The existence of institutional equivalents is likely to act as a reference category of peers to imitate the behavior. In the context of earnings management, one can say that if the earnings management practices of the focal firm are influenced by the earnings management practices of industry peers and local peers, then the joint impact of earnings management practices of the industry and local peers is likely to be higher on the earnings management practices of focal firms, consistent with the notion of institutional equivalents' tenets and the agency theory. However, in absence of institutional equivalents, the earnings management decisions depend on their own earnings management practices and are less likely to be influenced by their peers. Accordingly, our first two hypotheses are as follows:

H1. The joint impact of earnings management practices of the industry and local peers is likely to be more on the earnings management practices of focal firms.

H2. The earnings management practices of the industry and local peers are likely to be positively associated with its own earnings management in the absence of institutional equivalents.

Further, we posit that influential impact is higher when the difference between the activities of peers (industry and local) is uncertain. It has been well-documented in the strategic management literature that when the difference between the behavior of peers in the different fields is greater, then the degree of uncertainty will be higher in terms of following the institutional equivalents (Leary and Roberts, 2014; Machokoto *et al.*, 2021; Raffaelli *et al.*, 2013). Firms are likely to take cues from their peers simultaneously to assure of the right action while imitating (Christopher and Tilcsik, 2016; Singh *et al.*, 2021). When the degree of uncertainty is greater, firms rely more on the legitimate reference group (Rao *et al.*, 2001), consistent with the social acceptance theory (Wolsink, 2018). We predict that firms are more likely to imitate their institutional equivalent for earnings management when the difference between the magnitude of earnings management among the industry and local peers is greater. Accordingly, our next hypothesis is as follows:

H3. The influence of institutional equivalents is likely to be greater when the difference between the earnings management practices of industry peers and local peers is greater.

3. Research design

3.1 Measurement of earnings management

We measure earnings management via accrual-based earnings manipulation due to its greater applicability among Indian firms, where firms are found to take leeway under Indian generally accepted accounting principles (IGAAP) and IFRS-converged standards for recording the accrual component of earnings (for instance, Bansal, 2022; Adhikari *et al.*, 2021). Consistent with Maharani and Soewarno (2018), we use the performance-adjusted modified Jones model (Kothari *et al.*, 2005) to estimate discretionary or abnormal levels of accruals. The model is as follows:

$$\frac{ACC_{i,t}}{AT_{i,t-1}} = \varnothing_1\left(\frac{1}{AT_{i,t-1}}\right) + \varnothing_2\frac{(\Delta REV - \Delta REC)_{i,t}}{AT_{i,t-1}} + \varnothing_3\frac{PPE_{i,t}}{AT_{i,t-1}} + \varnothing_4 ROA_{i,t} + \varepsilon_{i,t} \quad (1)$$

where *ACC* is total accruals. ΔREV and ΔREC are defined as the change in revenue from operations and accounts receivable, respectively. *PPE* represents plant, property and equipment. *ROA* is the return on assets. We estimate the model (1) cross-sectionally for each industry year with a minimum of 15 observations. Two digits classification code has been used to identify the industry. The subscript *i* and *t* denote firms and the year, respectively. The absolute value of residuals ($\varepsilon_{i,t}$) measure discretionary accruals.

3.2 Measurement of industry peer's and local peer's DAC

We defined industry peers as BSE listed firms in the same two-digit Standard Industrial Classification (SIC) code as the focal firm, and we defined local peers as BSE listed firms headquartered in the same core-based statistical area as the focal firm. Given these explanations of peer groups, we operationalized the firm's institutional equivalents as of its local peers that were also simultaneously its industry peers (*DAC_IE*). We calculated the average *DAC* of industry peers (*DAC_IP*) and average *DAC* of local peers for each year (*DAC_LP*). We created the variable industry-local difference (*I-L difference*), defined as the absolute value of the difference between industry peers' earnings management and local peers' earnings management.

3.3 Empirical models to test hypotheses

The following model (2) has been employed to test the conjecture under H1.

$$\begin{aligned} DAC_{i,t} = {} & \alpha_0 + \beta_1 DAC_IE_{i,t} + \beta_2 DAC_IP_{i,t} + \beta_3 DAC_LP_{i,t} + \beta_4 Total\ assets_{i,t} \\ & + \beta_5 ROA_{i,t} + \beta_6 Lev_{i,t} + \beta_7 MTB_{i,t} + \beta_8 OCF_{i,t} + \beta_9 Age_{i,t} \\ & + \beta_{10} OWNCON_{i,t} + \beta_{11} BIGN_{i,t} + \beta_{12} INDIR_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{2}$$

where *DAC* is discretionary accruals measured as residual from the model (1). *DAC_IE*, *DAC_IP,* and *DAC_LP* are our main variables of interest, where *DAC_IE* is the *DAC* of firms with institutional equivalents and *DAC_IP* and *DAC_LP* are the average value of *DAC* among industry peers and local peers, respectively. Total assets are the standardized value of a firm's total assets. It is used as a measure of a firm's size as larger firms engaged in earnings management to meet or beat analysts' forecasts (Bansal *et al.*, 2022). We include a firm's profitability (return on assets) in the model to control for the scale effects (Bansal, 2022). Following Bansal and Bashir (2022), we control for corporate governance variables, namely, *INDIR* as a higher proportion of independent directors on boards is likely to reduce the likelihood of a firm's engagement in earnings management. We control for the type of auditors as firms audited by big4 auditors are less likely to be engaged in earnings management due to their strict and critical review of financial statements.

We employ the following model (3) under firms with no institutional equivalents to test the conjecture under H2:

$$DAC_{i,t} = \alpha_0 + \beta_1 DAC_IP_{i,t} + \beta_2 DAC_LP_{i,t} + Controls + \varepsilon_{i,t} \tag{3}$$

To test the assertion under H3, we employ the following model (4).

$$\begin{aligned} DAC_{i,t} = {} & \alpha_0 + \beta_1 DAC_IE_{i,t} + \beta_2 DAC_IP_{i,t} + \beta_3 DAC_LP_{i,t} + \beta_4 I - L\ difference_{i,t} \\ & + \beta_5 DAC_{IE} * IL\ difference_{i,t} + Controls + \varepsilon_{i,t} \end{aligned} \tag{4}$$

4. Data collection and empirical results

4.1 Data collection and sample selection

The data of the BSE listed firms have been used in the study. The financial data required for the analysis have been extracted from the Prowess database maintained by the Centre for Monitoring Indian Economy Private Limited. Our initial sample is 4,802 firms spanning over 12 financial years commencing from the financial year ending March 2010 to March 2021. It results in initial 57,624 firm years for testing our hypotheses. However, following Bansal *et al.* (2022), we have excluded the financial and utility firms from our sample due to their different financial reporting environment. We have also removed the firm years with negative sales or asset values and firm years having missing observations for measuring earnings management and control variables. We further removed the firms with missing observations for identifying industry and local peers. After these exclusions, we are left with a balanced sample of 1,562 firms (18,744 firm years) for testing our hypotheses. We winsorized all the continuous variables at 1% on both ends to overcome the effect of outliers. Table 1 explains the definition and measurement of the variables used in this study. The process of finalizing the sample is explained in Table 2.

4.2 Descriptive statistics and correlation analysis

Descriptive statistics and correlations appear in Table 3, separately for firms that have institutional equivalents and those that do not. The two samples did not differ significantly in the average level of *DAC*, *Size*, *Lev*, *Age* and *ROA*. It has been found firms having institutional equivalents are larger and are relatively older. Unsurprisingly, the firms with institutional equivalents have more industry peers and local peers, as the number of peers in the two fields is found to be higher.

Variables	Definition and measurement
Industry peers (IP)	Industry peers such as the BSE listed firms in the same two-digit National Industrial Classification (SIC) code as the focal firm
Local peers (LP)	Local peers as BSE listed firms headquartered in the same city as the focal firm
Institutional equivalents (IE)	A firm's institutional equivalents of its local peers were also simultaneously its industry peers
DAC	The absolute value of discretionary accruals, where discretionary accruals are measured as residuals from the model (1)
DAC_IE	Average *DAC* of local peers that are also industry peers
DAC_IP	Average *DAC* of industry peers in a given year
DAC_LP	Average *DAC* of local peers for each year
I-L difference	Absolute value of the difference between industry peers' *DAC* and local peers' *DAC*
Size	The natural logarithm of total assets of Firm *i* in Year *t*
Lev	Degree of financial leverage measured as proportion of total outside liabilities to total assets of Firm *i* in Year *t*
MTB	The market to book ratio that equals the firm's market capitalization divided by book value for Year *t*
OCF	Operating cash flow scaled by the total assets
ROA	Return on assets measured as the ratio of profits to net assets in the current year
Age	The natural logarithm of difference between current year and year of incorporation of firm
OWNCON	A binary variable taking the value one if the ownership of shareholder exceeds 50% and zero otherwise
Big4	A binary variable that equals one for the firms audited by Big 4 auditors and zero otherwise
INDIR	Independent directors' ratio, measured as the proportion of independent directors to board of directors

Table 1. Variable definition

4.3 Multivariate regression analysis

Under the panel data regression models, we have three models namely the pooled model, the fixed effects model and the random effects model. We run different tests to identify the most appropriate model for running our empirical models. In particular, we run the F test (to compare the pooled ordinary least squares (OLS) against the fixed effects model), the LM test (to compare the pooled OLS against random effect) and the Hausman test (to compare fixed and random effects models). To provide a comprehensive view of the estimation, we have reported the results of both the pooled and fixed effects model. The objective of the study is to know the practices of firms that have shared industry and location both; hence, we compare the *DAC* of firms (focal firms) and *DAC* of firms having institutional equivalents. In other words, we are comparing the behavior of firms having institutional equivalents and having no institutional equivalents.

Table 4 present the results for the first hypothesis that the presence of institutional equivalents influences the earnings management practices of focal firms. The coefficient of our main variable of interest – *DAC_IE* is positive and significant at a 1% level of significance (0.163 and $p < 0$), implying that earning management practices of the focal firm are a function of peers (industry peers or local peers). The individual effect of the industry and local peers is not significant (0.081, −0.067 and $p > 0.1$), implying that earning management practices of the focal firm are not dependent on their industry peers or local peers. The direction of these main variables is found to be the same under the fixed effects model too (Column 2 of Table 4). These results are consistent with our prediction as the relationship between earnings management of firms' institutional equivalents is positively associated with their own earnings management, suggesting that the firm closely follows their institutional equivalents. These are consistent with the findings of many prior studies on institutional equivalents (Leary and Roberts, 2014; Machokoto *et al.*, 2021) that firms follow their institutional equivalents for major financing decisions.

Table 5 shows the results for Model 3, where we examine the individual impact of local and industry peers on the earnings management practices of firms having no institutional equivalents. The coefficients of *DAC_IP* and *DAC_LP* are positively associated with *DAC* (0.187, 0.19 and $p < 0.00$), implying that firms having no institutional equivalents have fundamentally different imitation patterns than firms with institutional equivalents. The direction of the coefficients is found to be the same under the fixed effects model (Column 2). It shows that individual local and industry peers significantly impact the earnings management of focal firms, hence providing empirical support for the influence of institutional equivalents on the focal firm's imitation behavior. These results are consistent with our H2 and in line with the findings of Christopher and Tilcsik (2016) and Singh *et al.* (2021) that firms imitate their local peers and industry peers.

Table 6 presents the results for Model 4 used to examine whether the influence of institutional equivalents on the imitation behavior of focal firms is stronger or weaker under

Table 2. Sample selection

Particulars	Firms	Firm years
Initial observations from the Prowess database (March 2010–March 2021)	4,802	57,624
Less: financial and utility firms	845	10,140
Less: firms with negative sales or assets	243	2,916
Less: firms with missing observations for measuring *DAC*	891	10,692
Less: firms with missing observations for measuring *Industry peers*	422	5,064
Less: firms with missing observations for measuring *Local peers*	275	3,300
Less: firms with missing observations for measuring control variables	564	6,768
The final sample for testing hypotheses	1,562	18,744

Table 3. Descriptive statistics and correlation analysis

Variable	The full sample (18,744) Mean	SD	Firms with institutional equivalents (6,696) Mean	SD	Firms without institutional equivalents (12,048) Mean	SD
Panel A: Descriptive statistics						
DAC	0.007	2.167	0.002	1.520	0.007	2.188
DAC_IE	0.043	0.740	0.061	0.960		
DAC_IP	0.012	1.103	0.024	2.130	0.039	1.772
DAC_LP	0.053	0.773	0.047	0.750	0.047	0.571
Size	7.540	0.561	8.142	0.420	5.153	0.971
Lev	0.881	0.159	0.541	1.152	0.840	1.153
MTB	2.153	0.881	1.092	2.180	0.942	2.744
OCF	0.740	1.153	0.453	0.672	0.551	0.430
Age	5.143	0.542	6.485	1.157	4.561	0.553
OWNCON	0.660	0.740	0.730	0.750	1.541	1.134
BigN	0.214	0.961	0.196	0.766	0.157	2.143
INDIR	0.564	0.192	0.498	0.220	0.567	1.200

Variable	1	2	3	4	5	6	7	8	9	10	11	12	VIF
Panel B: Correlation matrix													
1. DAC	1.000												1.852
2. DAC_IE	0.150	1.000											2.461
3. DAC_IP	0.070	0.090	1.000										2.742
4. DAC_LP	0.110	0.147	0.087	1.000									2.751
5. Size	0.223	0.083	0.061	0.054	1.000								4.152
6. Lev	−0.245	−0.140	−0.157	−0.084	0.108	1.000							3.742
7. MTB	0.092	0.116	0.073	0.091	0.142	0.120	1.000						1.512
8. OCF	0.117	0.070	0.128	0.137	−0.087	0.193	0.083	1.000					1.845
9. Age	0.314	0.139	0.108	0.075	0.081	0.042	0.018	0.042	1.000				1.742
10. OWNCON	−0.120	−0.082	−0.073	−0.084	0.172	0.173	0.137	0.113	0.185	1.000			2.751
11. BigN	−0.080	−0.094	−0.024	−0.044	−0.152	0.082	0.043	0.047	0.094	0.072	1.000		4.512
12. INDIR	−0.207	−0.187	−0.150	−0.125	−0.073	0.118	−0.073	−0.110	0.221	−0.056	0.052	1.000	2.733

Table 4. Test results for Hypothesis 1 (Model 2)

Variables	Pooled	Fixed
DAC_IE	0.163***	0.097**
	(5.009)	(2.150)
DAC_IP	0.081	0.038
	(1.127)	(0.882)
DAC_LP	−0.067	−0.049
	(0.943)	(1.153)
Intercept	0.110*	0.160
	(1.751)	(1.560)
Year fixed effect	Yes	Yes
Controls	Yes	Yes
Adjusted *R* sq.	0.342	0.229
p-value	0.000	0.000
The number of firm years	18,744	18,744

Table 5. Test results for Hypothesis 2 (Model 3)

Variables	Pooled	Fixed
DAC_IP	0.187***	0.127***
	(6.512)	(5.184)
DAC_LP	0.190***	0.142**
	(4.865)	(2.113)
Intercept	0.090	0.143***
	(1.452)	(4.672)
Year fixed effect	Yes	Yes
Controls	Yes	Yes
Adjusted *R* sq.	0.440	0.339
p-value	0.000	0.000
The number of firm years	18,744	18,744

certain circumstances. We found that when the I-L difference is high, then the average levels of *DAC* in the industry and the local are dissimilar. Consistent with our results in Table 4, the coefficient of *DAC_IE* is significantly positive (0.18 and $p < 0$), whereas the individual effects of industry peers and local peers are insignificant (0.09, 0.06 and $p > 0.10$). The coefficient of our main variable of interest in Model 4 – *DAC_IE***I-L difference* is significantly positive (0.08 and $p < 0.1$), suggesting that if the difference between the earnings management level of industry and local peers is greater, then the influence of institutional equivalents is more. Overall, the results are in line with our prediction (H3) and consistent with the findings of Machokoto *et al.* (2021) and Raffaelli *et al.* (2013) that firms imitate institutional equivalents when the difference between local and industry peers is greater.

4.4 Robustness checks

We have used working capital accrual models to measure accrual-based earnings management. The working capital accrual model differs from the modified Jones model in that it incorporates the change in operating cash flow as an explanatory variable.

$$\frac{WCA_{i,t}}{AT_{i,t-1}} = \varnothing_1\left(\frac{1}{AT_{i,t-1}}\right) + \varnothing_2\frac{(\Delta REV - \Delta REC)_{i,t}}{AT_{i,t-1}} + \varnothing_3\frac{Ch_CFO_{i,t}}{AT_{i,t-1}} + \varepsilon_{i,t} \quad (5)$$

Variables	Pooled	Fixed
DAC_IE	0.180***	0.156***
	(8.451)	(4.740)
DAC_IP	0.090	0.060*
	(1.457)	(1.881)
DAC_LP	0.060	0.090
	(0.773)	(0.450)
*DAC_IE*I-L difference*	0.080*	0.070*
	(1.875)	(1.696)
Intercept	−0.640	−0.453***
	(−1.443)	(−3.552)
Controls	Yes	Yes
Year fixed effect	Yes	Yes
Adjusted *R* sq	0.403	0.293
p-value	0.000	0.000

Table 6. Test results for Hypothesis 3 (Model 4)

where *WCA* is working capital accruals calculated as current assets net of cash balance minus current liabilities net of short-term debt included in current liabilities. Cash and short-term debt are excluded as they do not represent operating accruals. *Ch_CFO* is the change in cash flow from operations. All other variables have the same meaning assigned previously in Model (1). The absolute value of residuals ($\varepsilon_{i,t}$) measures *DAC*. Results (untabulated) [1] of Models 2, 3 and 4 under the alternative measurement of *DAC* show that the direction of the coefficient of the main variables of interest is the same as reported under the main analysis.

4.5 Additional analysis

The impact of institutional equivalents is not likely to be the same across firms. The cross-sectional characteristics are likely to influence the association between the behavior of the focal firm and institutional equivalents. We examine the impact of two fundamental characteristics, namely, firm size and performance because both factors are likely to filter the influence of institutional equivalents. We argue that large firms have greater capital market pressure of meeting forecasts (Hope, 2003); hence, they are more likely to imitate their institutional equivalents in terms of earnings management practices. On the contrary, profitable firms are less likely to imitate because of their profitable venture and lesser incentives for reporting inflated or deflated profits. Therefore, the higher financial performance of firms refrains them from following their peers in terms of their strategic actions such as earnings management. We employ the following model (6) and (7) to investigate the impact of firm size and profitability on the association between the earnings management practices of focal firms and those of institutional equivalents.

$$DAC_{i,t} = \alpha_0 + \beta_1 DAC_IP_{i,t} + \beta_2 DAC_LP_{i,t} + \beta_3 DAC_{IP} * Total\ assets_{i,t} + \beta_4 DAC_LP * Total\ assets_{i,t} + Controls + \varepsilon_{i,t} \quad (6)$$

$$DAC_{i,t} = \alpha_0 + \beta_1 DAC_IP_{i,t} + \beta_2 DAC_LP_{i,t} + \beta_3 DAC_{IP} * RAO_{i,t} + \beta_4 DAC_LP * ROA_{i,t} + Controls + \varepsilon_{i,t} \quad (7)$$

Table 7 shows the results of Model 6 and Model 7. The coefficient of *DAC_IP** *Total assets* (0.105, $p < 0.00$) and

Table 7.
Test results for additional analysis

Variables	Model 6	Model 7
DAC_IP	0.054***	0.093***
	(3.551)	(4.700)
DAC_LP	0.081***	0.112***
	(5.511)	(2.807)
DAC_IP Total assets*	0.105***	
	(5.443)	
DAC_LP Total assets*	0.167**	
	(2.530)	
DAC_IP ROA*		0.080
		(0.993)
DAC_LP ROA*		−0.043
		(1.208)
Intercept	2.882***	3.440**
	(9.112)	(2.083)
Controls	Yes	Yes
Year fixed effect	Yes	Yes
Firm fixed effect	Yes	Yes
Adjusted *R* sq.	0.229	0.229
p-value	0.000	0.000
Firm years	18,744	18,744

Note(s): The table shows the regression results of Model 6 and Model 7. ***, **, and * indicate significance at 1%, 5% and 10% (two-tailed) levels, respectively. The robust *t* statistic is reported in parentheses

DAC_LP Total assets* (0.167, $p < 0.05$) are positive, indicating that large firms are more likely to imitate their industry and local peers in the absence of institutional equivalents. They are more attentive than their smaller counterparts while following the earnings management practices of institutional equivalents. These findings are consistent with the findings of Bansal *et al.* (2022) that large firms engaged in earnings management due to capital market pressure of meeting benchmarks. Further, we find that the coefficients of *DAC_IP* ROA* and *DAC_LP* ROA* are insignificant, implying that *the* financial performance of firms does not influence the imitation of either industry or local peers. It implies that loss-making firms have more incentives than profitable firms to follow their institutional equivalents for earnings management decisions.

5. Conclusion

The study empirically investigates the impact of institutional equivalents on the earnings management practices of firms. Drawing the tenets from the institutional theory, the study posits that firms having a common industry and region are strongly imitating each other. Based on a sample of 18,744 firm years, we find a statistically significant relationship between the earnings management of a firm's institutional equivalents and the firm's own earnings management, implying that firms closely follow their institutional equivalents. The association is found to be more pronounced when the difference between the earnings management levels of industry and local peers is greater, implying uncertainty increases the likelihood of imitation among firms.

The study adds to the earnings management literature as it identifies the institutional equivalents as an additional source of variation in the earnings quality of firms. Our study is among the earlier attempts to introduce the concept of institutional equivalence in the earnings management domain and document it as a determinant of earnings. The study also responded to a research call made by Da Silva *et al.* (2021) on examining the contagion effect

on earnings management in emerging markets such as India. The findings have important practical implications for auditors and analysts to take into account the earnings management practices of local and industry peers while analyzing the client's financial statements. The contagion effect of earnings management is likely to impact the investor's sentiments and shake their confidence in the earnings disclosed by firms in their financial statements, which in turn, impacts their investment behavior toward focal firms. Our findings have implications for understanding peer imitation processes, particularly when firms face increasingly multifaceted institutional environments. It also suggests authorities make more mandatory disclosure requirements separately for local and industry peers to curb the corporate misfeasance of earnings management.

Our study, of course, is not without its limitations. The study has considered only the data from developing nations, i.e. India; hence, generalizability is a major concern. It suggests research community to reinvestigate the issue in developed nations. The study has considered only local and industry peers hence suggesting future direction on examining the interorganizational imitation under a wider set of relevant and potentially overlapping peer groups such as firms having common governance practices, firms having similar board composition, firms having common corporate social responsibility activities, etc. The study used panel data regression models that do not control for the exogenous shocks; hence future research can be conducted by using the "difference-in-difference" technique that enables researchers to isolate the impact of concurrent economic shocks on the earnings management practices of focal firms.

Note

1. These results are made available from authors upon the readers' request.

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