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# VALUE RELEVANCE OF MANAGED EARNINGS IN INDIAN FIRMS: AN IMPACT ANALYSIS OF IFRS CONVERGENCE USING DYNAMIC PANEL MODELS

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## Abstract

The study explores the relationship between earnings management and value relevance of accounting information of Indian listed firms by investigating three different modes of earnings management – total, short-term and long-term discretionary accruals. Additionally, the study investigates the impact of the converged International Financial Reporting Standards (IFRS), known as Indian Accounting Standards (IndAS), on earnings management which in turn influences value relevance. This study is the first in India to analyse the differential effects of short-term and long-term earnings management on value relevance and to address the endogeneity issue in the price value relevance model through dynamic panel modelling while controlling for the use of the IndAS. The study finds a significant effect of both short-term and long-term accruals management on value relevance and a positive influence of IndAS on the relationship between earnings management and firm value.

*Keywords:* earnings management, value relevance, IFRS, IndAS, discretionary accruals, endogeneity

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## 1. INTRODUCTION

Financial statements are useful to their users when they contain information which is relevant and reliable. Investors in the capital markets often rely upon these statements for their investment decisions. The premise of the capital market-based accounting research (Barth et al., 2001;

Beaver, 2002; Ball, 2006; Christensen et al., 2015; Kouki, 2018a) is based upon the foundation that investors' reaction to useful accounting information is reflected in the firm's stock prices. Earnings are an important determinant of firm value. The Mechanistic Hypothesis Theory suggests that managers can systematically mislead the capital market investors by managing

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earnings through changes in accounting methods. Earnings management (EM) through accruals is one such widely used method and is also the most researched (Noronha et al., 2008; Ecker et al., 2013; Jackson, 2018). Accruals are an important component of earnings which may be used by the managers to adjust cash flows within the business. The opportunistic management of accruals can render the earnings unreliable, thus making earnings less value-relevant. Therefore, empirically analysing the impact of such practices on the value relevance of accounting information is of prime importance. This helps ascertain whether the market prices which drive the decision-making process of stakeholders are influenced by true and fair financial information or by the discretionary manipulation of earnings by the managers.

This study makes unique contributions to the existing research in the area. First and foremost, the research gap lies in the fact that most of the EM literature relies upon the total discretionary accruals (TDA). Very few studies (Whelan & McNamara, 2004; Al-Shattarat, 2021) distinctly examine the use of the long-term accruals (LTDA) and short-term accruals (STDA) in earnings management. It is believed that the effect of discretionary accruals on value relevance for the long-term is expected to be significant because of its high susceptibility to earnings management (Al-Shattarat, 2021). Consequently, our study aims to distinguish between the impacts of short-term and long-term accruals earnings management (SAEM and LAEM) practices on value relevance among Indian firms.

Indian firms make an interesting sample for such studies due to their diversity in terms of their sizes, ownership structures, levels of competition and managerial

composition and most importantly the shift to new accounting standards. Earnings management and value relevance have been individually researched for this emerging economy in the past (Ghalke et al., 2018; Goel, 2018; Bansal & Garg, 2021). However, none of these studies combine the two reporting quality parameters to understand the impact of one on the other, which our study attempts to do.

The Generally Accepted Accounting Principles (GAAP) are generally known to allow freedom, flexibility and significant levels of managerial discretion to alter earnings. Accounting standards in India have undergone a revolution since the financial year 2015-16 as it gradually transitioned from the GAAP to the IFRS-converged Indian Accounting Standards (IndAS). India, being one of the few jurisdictions to converge the IFRS standards with its own instead of adopting them, provides a potential research gap for this study thereby creating the need to understand if the new standards are influential in reducing the negative effects of earnings management on value relevance.

Consequently, the present research is undertaken and to the best of the authors' knowledge, it is the first study in India to analyse the differential impact of short-term and long-term sources of earnings management on the value relevance of accounting information reported by listed corporates. It is also the first study to ascertain the role played by the newly introduced IFRS-converged IndAS in the relationship between earnings management and value relevance. Additionally, we address the endogeneity issues in the models commonly used in the literature.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Representational faithfulness is identified as a major determinant and a prime characteristic of high-quality financial information. Agency theory explains the problem of conflict between the shareholders (Principals) and the corporate executives or managers (Agents). Managers may have incentives to take biased accounting decisions while preparing financial information which are detrimental to the interests of the firm's owners (Callao & Jarne, 2010). This gives rise to the problem of incomplete and asymmetric information which is often a result of earnings manipulation. Shareholders rely upon this information to take their investment decisions which can be biased if the information is unreliable. The use of high-quality standards like the IFRS and IFRS-based standards have further fuelled the debate on its role in reducing information manipulation and improving firm value.

Accruals comprise of the Discretionary Accruals (DA) and Non-Discretionary Accruals (NDA). It is easier to manipulate the DA component since they are more in the control of the managers than the NDA which are determined by economic circumstances and are governed by accounting standards. Regression models based on Discretionary Accruals – also known as abnormal accruals – are widely used in such literature and are considered as a proxy for earnings management (Jones, 1991; Dechow et al., 1995). The earnings management literature is mainly focussed on detecting the existence of such practices among firms. The impact that it has on the firm's value remains largely unexplored. Value relevance of accounting information remains an evolving parameter

of financial reporting quality (Barth et al., 2023). Marquardt & Wiedman, (2004) find that both nondiscretionary and discretionary earnings components reflect decreased value relevance. Value relevance of the earnings levels increases and that of earnings changes decreases in the presence of earnings management. Ratnaningrum et al., (2021) find a negative effect on value relevance for companies engaged in earnings management when sustainability reporting practices are used to conceal their poor earnings. Earnings management practices have a significant mediating role in the relationship between deferred tax and both share prices and market value of equities, which means that management does not use deferred tax to manipulate earnings to affect the investors' decisions (Soliman & Ali, 2020).

Traditionally earnings management practices have been investigated through the presence of total discretionary accruals alone (Lee & Son, 2009; Achleitner et al., 2014; Ghazali et al., 2015; Kouki, 2018b). The mere presence or increase in the levels of such accruals has been implied as being an indicator of earnings manipulation within a firm. However, it is important to compare the absolute values of the estimated discretionary accruals (DA) with an industry standard. Furthermore, conclusions cannot be drawn simply based on total accruals without discounting for the usage of short-term and long-term discretionary accruals. The present study therefore considers three sources of earnings management – total discretionary accruals (TDA), short-term discretionary accruals (STDA) and long-term discretionary accruals (LTDA). It contributes to the existing literature on earnings management practices in India by analysing the differential impact of short-term accruals against long-term accruals

rather than relying upon only total accruals as a proxy. We classify the firms into those practicing earnings management versus those who do not based on whether their estimated discretionary accruals are above or below the industry median for the same.

Although not all earnings management techniques are opportunistic and deceptive, the current consensual sentiment among regulators and standard setters is that earnings management is detrimental. It is unfair to investors and reduces the reliability of the financial reports. Therefore, as an area of research, it calls for a clearer understanding of its impacts. India has unfortunately witnessed manipulation of earnings in big companies such as Satyam and Kingfisher Airlines. A significant amount of research has been undertaken in India to understand earnings management in the context of multi-nationality of firms, auditor's perceptions, financial distress, Initial Public Offers (IPO) and managers' fixation on operating profits (Gakhar, 2014; Agrawal & Chatterjee, 2015; Nagar & Sen, 2016; Shette et al., 2016; Ghalke et al., 2018; Goel, 2018). To expand this literature by including an understanding of the impact of EM practices on a firm's stock prices, the present study tests the value relevance of earnings and book values of Indian listed firms in the presence of earnings management practices.

**H1:** Earnings management practices through discretionary accruals affect the value relevance of accounting information of Indian listed firms.

Whelan & Mcnamara, (2004) point out that it may be difficult for managers to conceal the manipulation of STDA as these accruals are expected to reverse in one

accounting period whereas LTDA which reverse over time in the future, offer enough time and opportunity to the management to conceal their manipulations. These two modes of accruals therefore play important roles and provide managements the opportunities to use them alternatively. Whelan and Mcnamara, (2004) findings for Australian firms are confirmed by a more recent study by Al-Shattarat, (2021) for Saudi Arabia. They too find evidence to support that earnings management through long-term discretionary accruals are more value relevant than those done through short-term discretionary accruals. We aim to test the validity of these findings in the Indian context and hypothesize the following:

**H2:** Earnings management practices through long-term discretionary accruals have a higher negative impact on value relevance than earnings management through short-term discretionary accruals for Indian listed firms.

The quality of accounting standards determines the probability of opportunistic behaviour among managers. While rigid rules may constrain and deter such behaviour, flexible rules, accounting standards and principles may allow higher discretion which may be misused in the absence of effective controls (Healy, 1985). Researchers across the world have attempted to study the association between implementation of IFRS and accounting quality with respect to earnings management practices in companies. There have been conflicting results, with some researchers indicating a decline while the others reporting a rise in earnings manipulations. An extensive study of 15 EU member countries by Chen et al. (2010) and a similar

study by Zeghal et al., (2012) found evidences of reduced earnings management after the switch to IFRS by sample firms. On the contrary, Callao and Jarne, (2010) study in 11 EU countries, showed an increase in earnings management since IFRS adoption. Bansal & Garg, (2021) test the impact of IndAS on earnings smoothing and discretionary accruals for the Indian firms' data of 2015-16 and 2016-17. The findings of the study are however based on the analysis of only two years as it compares one year each as a pre and post-IFRS year for 438 companies.

The present study not only aims to investigate the impact of IndAS on EM but the role it plays in curbing the negative effects of EM on value relevance which leads to the third hypothesis.

**H3:** The use of IndAS influences the relationship between earnings management and value relevance of accounting information of Indian listed firms.

We expect the interaction of IndAS with earnings management to have a positive impact on value relevance.

### 3. RESEARCH DESIGN

#### 3.1. Sample and data

The initial sample comprised of all firms which have remained listed on the National Stock Exchange (NSE) of India during the

study period from 2011-2012 to 2020-21. The study period incorporates the years before and after the mandatory use of the IndAS by listed firms commenced in India in the financial year 2017-18. Financial companies (banking, insurance and non-banking financial companies) which are yet to follow the IndAS and companies which do not follow the April to March financial year pattern were excluded from the sample. We further eliminated firms which had missing values in any given year in order to create a strongly balanced panel data set. The data for the financial and accounting variables is extracted from the ProwessIQ database maintained by the Centre for Monitoring Indian Economy (CMIE) Ltd. and the industry data is obtained from the NSE India website. Table 1 shows the sample sets used in testing the hypotheses for total, short-term and long-term accruals-based EM.

#### 3.2. Model specification

The research is designed to find a relationship between the value relevance of accounting variables and firms' earnings management practices along with other control variables. More importantly, it studies the influence of IFRS convergence on the said relationship. In contrast with the existing earnings management literature which uses total discretionary accruals, the present study is based on the use of short-term and long-term discretionary accruals as well to prove its hypotheses.

The Ohlson (1995) model, which

*Table 1. Sample sub-sets for hypotheses testing*

	No. of firms
Total accruals management	723
Short-term accruals management	655
Long-term accruals management	655

provides the framework to link market value to earnings and book value, is used as the base model for our empirical analysis. The model is extended by using *TAEM*, *SAEM* and *LAEM* variables as indicators of earnings management practices undertaken through total discretionary accruals, short-term discretionary accruals and long-term discretionary accruals respectively. The proposed models are as follows:

**Model (1a)**

$$\begin{aligned} MVPS_{it} = & \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} \\ & + \beta_3 TAEM_{it} + \beta_4 EPS \times TAEM \\ & + \beta_5 Size_{it} + \beta_6 Lev_{it} \\ & + \beta_7 Growth_{it} + e_{it} \end{aligned}$$

**Model (1b)**

$$\begin{aligned} MVPS_{it} = & \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} \\ & + \beta_3 TAEM_{it} + \beta_4 BVPS \times TAEM \\ & + \beta_5 Size_{it} + \beta_6 Lev_{it} \\ & + \beta_7 Growth_{it} + e_{it} \end{aligned}$$

**Model (2a)**

$$\begin{aligned} MVPS_{it} = & \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} \\ & + \beta_3 SAEM_{it} + \beta_4 EPS \times SAEM \\ & + \beta_5 Size_{it} + \beta_6 Lev_{it} \\ & + \beta_7 Growth_{it} + e_{it} \end{aligned}$$

**Model (2b)**

$$\begin{aligned} MVPS_{it} = & \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} \\ & + \beta_3 SAEM_{it} + \beta_4 BVPS \times SAEM \\ & + \beta_5 Size_{it} + \beta_6 Lev_{it} \\ & + \beta_7 Growth_{it} + e_{it} \end{aligned}$$

**Model (3a)**

$$\begin{aligned} MVPS_{it} = & \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} \\ & + \beta_3 LAEM_{it} + \beta_4 EPS \times LAEM \\ & + \beta_5 Size_{it} + \beta_6 Lev_{it} \\ & + \beta_7 Growth_{it} + e_{it} \end{aligned}$$

**Model (3b)**

$$\begin{aligned} MVPS_{it} = & \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} \\ & + \beta_3 LAEM_{it} + \beta_4 BVPS \times LAEM \\ & + \beta_5 Size_{it} + \beta_6 Lev_{it} \\ & + \beta_7 Growth_{it} + e_{it} \end{aligned}$$

where,  $MVPS_{it}$  is the stock price of firm  $i$  taken as on 31<sup>st</sup> May of year  $t$  such that the accounting information released by listed firms at the end of the financial year is completely absorbed by the stock markets.  $BVPS_{it}$  is the book value of equity per share and  $EPS_{it}$  is the reported earnings per share of firm  $i$  for year  $t$ .  $TAEM_{it}$ ,  $SAEM_{it}$  and  $LAEM_{it}$  are dummy variables which take the value 0 if the firm's absolute discretionary (total, short-term and long-term) accruals are below their industry median for a given year and value of 1, otherwise. The study undertakes sensitivity analysis by introducing control variables like size of the firms in the form of total assets ( $Size_{it}$ ), leverage calculated as the debt-to-asset ratio ( $Lev_{it}$ ) and growth rate ( $Growth_{it}$ ) calculated as the change in sales from the previous year.  $e_{it}$  is error term.

In order to prove the first hypotheses, we expect  $\beta_4$  in Model 1a, 1b, 2a, 2b, 3a and 3b to be negative to conclude that the value relevance of earnings and book values is lower for firms who practice earnings management as compared to those who do

not. The second hypothesis attempts to differentiate between the impact of long-term and short-term discretionary accruals-based earnings management practices on value relevance. The following models are aimed at ascertaining whether managing earnings through LTDA has higher impact on firm value in comparison with STDA. To prove the second hypothesis, we expect a more significant negative value for coefficient  $\beta_4$  in models (3a) and (3b) as compared to that of models (2a) and (2b).

The model is extended to introduce the *IndAS* variable to represent the use of IFRS-converged IndAS standards by Indian listed firms. This dummy variable takes the value '1' for the years during which a firm has followed the IndAS and '0' otherwise. The interaction of the *IndAS* variable with earnings management is required to test our third hypothesis. The extended models are as follows:

#### **Model (1c)**

$$\begin{aligned}
 MVPS_{it} = & \beta_0 \\
 & + \beta_1 EPS_{it} + \beta_2 BVPS_{it} + \beta_3 TAEM_{it} \\
 & + \beta_4 IndAS_{it} + \beta_5 TAEM_{it} \times EPS_{it} \\
 & + \beta_6 TAEM_{it} \times BVPS_{it} \\
 & + \beta_7 TAEM_{it} \times IndAS_{it} \times EPS_{it} \\
 & + \beta_8 TAEM_{it} \times IndAS_{it} \times BVPS_{it} \\
 & + \beta_9 Size_{it} + \beta_{10} Lev_{it} \\
 & + \beta_{11} Growth_{it} + e_{it}
 \end{aligned}$$

#### **Model (2c)**

$$\begin{aligned}
 MVPS_{it} = & \beta_0 \\
 & + \beta_1 EPS_{it} + \beta_2 BVPS_{it} + \beta_3 SAEM_{it} \\
 & + \beta_4 IndAS_{it} + \beta_5 SAEM_{it} \times EPS_{it} \\
 & + \beta_6 SAEM_{it} \times BVPS_{it} \\
 & + \beta_7 SAEM_{it} \times IndAS_{it} \times EPS_{it} \\
 & + \beta_8 SAEM_{it} \times IndAS_{it} \times BVPS_{it} \\
 & + \beta_9 Size_{it} + \beta_{10} Lev_{it} \\
 & + \beta_{11} Growth_{it} + e_{it}
 \end{aligned}$$

#### **Model (3c)**

$$\begin{aligned}
 MVPS_{it} = & \beta_0 \\
 & + \beta_1 EPS_{it} + \beta_2 BVPS_{it} + \beta_3 LAEM_{it} \\
 & + \beta_4 IndAS_{it} + \beta_5 LAEM_{it} \times EPS_{it} \\
 & + \beta_6 LAEM_{it} \times BVPS_{it} \\
 & + \beta_7 LAEM_{it} \times IndAS_{it} \times EPS_{it} \\
 & + \beta_8 LAEM_{it} \times IndAS_{it} \times BVPS_{it} \\
 & + \beta_9 Size_{it} + \beta_{10} Lev_{it} \\
 & + \beta_{11} Growth_{it} + e_{it}
 \end{aligned}$$

### **3.3. Measurement of variables**

The basic Ohlson, (1995) Model relies upon the market value, earnings and book value of shares as the core variables to measure value relevance. The extended version of the models employed in the study use dummy variables for earnings management calculated based on the level of discretionary accruals in firms for a given industry.

Studies on accruals earnings management

mainly use discretionary accruals as the proxy for determining the earnings management practices of the firm. Much of this research tends to focus on total discretionary accruals while completely disregarding its short-term and long-term components (Ghazali et al., 2015; Kouki, 2018b). The present study calculates three categories of discretionary accruals as proxies for earnings management carried out through short-term, long-term and overall manipulation of earnings. However, such practices cannot be studied in isolation without considering their pattern within the same industry. The industry median of the discretionary accruals is therefore used as the criteria to determine whether accruals earnings management (AEM) is practiced by a given firm within the said industry. Yearly cross-sectional regression equations are estimated for each industrial sector for the purpose of calculating the following accruals.

### 3.3.1. Total Discretionary Accruals

The model developed by Jones, (1991) and later modified by Dechow et al., (1995) is widely used in earnings management studies to calculate total discretionary accruals from the total accruals. The present study employs the performance-adjusted modified Jones model, proposed by Kothari et al., (2005) which adds the firm's Return on Assets (ROA) to control for the impact of performance on the calculation of the accruals. Performance adjustment of the model is particularly useful for the study, since our sample period includes very high growth years and coincides with the fall in earnings during the last two years of the study period. The Jones, (1991) model employed to calculate the total discretionary

accruals is presented as follows:

#### Model (4)

$$\begin{aligned} \frac{TA_{it}}{Assets_{t-1}} = & g_1 \frac{1}{Assets_{t-1}} \\ & + g_2 \frac{(\Delta Rev_{it} - \Delta Rec_{it})}{Assets_{t-1}} \\ & + g_3 \frac{PPE_{it}}{Assets_{t-1}} + g_4 ROA_{it} + e_{it} \end{aligned}$$

where,  $TA_{it} = NI_{it} - CFO_{it}$

#### Model (4a)

$$\begin{aligned} TDA_{it} = & \frac{TA_{it}}{Assets_{t-1}} - \left[ g_1 \frac{1}{Assets_{t-1}} \right. \\ & + g_2 \frac{(\Delta Rev_{it} - \Delta Rec_{it})}{Assets_{t-1}} \\ & \left. + g_3 \frac{PPE_{it}}{Assets_{t-1}} + g_4 ROA_{it} \right] \end{aligned}$$

All the variables employed in the estimation of discretionary accruals are described in Table 2. The estimated industry coefficients from Model (4) are used to calculate the non-discretionary accruals (NDA) for each firm. The TDA are then calculated as the difference between the total accruals (TA) and the NDA.

### 3.3.2. Short-term discretionary accruals

The study further uses short term discretionary accruals as a variable to determine their use in managing earnings. They are the discretionary component of the short-term accruals which are estimated by running industry wise cross-sectional regressions using the following revenue



component of the Jones, (1991) model:

**Model (5)**

$$\frac{STA_{it}}{Assets_{t-1}} = g_1 \frac{1}{Assets_{t-1}} + g_2 \frac{\Delta Rev_{it}}{Assets_{t-1}} + e_{it}$$

where,  $STA_{it} = \Delta Rec_{it} + \Delta Inv_{it} + \Delta OCA_{it} - \Delta AP_{it} - \Delta TaxP_{it} - \Delta OCL_{it}$

**Model (5a)**

$$STDA_{it} = \frac{STA_{it}}{Assets_{t-1}} - \left[ g_1 \frac{1}{Assets_{t-1}} + g_2 \frac{\Delta Rev_{it}}{Assets_{t-1}} \right]$$

The short-term discretionary accruals (STDA) for each sample unit are computed in Model (5a) as the difference between the total short-term accruals and their non-discretionary component by using industry coefficients estimated in Model (5).

**3.3.3. Long-term discretionary accruals**

In order to estimate the non-discretionary component of the long-term accruals we use Model (6) adopted from Whelan & Mcnamara, (2004).

**Model (6)**

$$\frac{LTA_{it}}{Assets_{t-1}} = g_1 \frac{1}{Assets_{t-1}} + g_2 \frac{PPE_{it}}{Assets_{t-1}} + g_3 \frac{Intang_{it}}{Assets_{t-1}} + g_4 \frac{NCP_{it}}{Assets_{t-1}} + e_{it}$$

where,  $LTA_{it} = TA_{it} - STA_{it}$

**Model (6a)**

$$LTDA_{it} = \frac{LTA_{it}}{Assets_{t-1}} - \left[ g_1 \frac{1}{Assets_{t-1}} + g_2 \frac{PPE_{it}}{Assets_{t-1}} + g_3 \frac{Intang_{it}}{Assets_{t-1}} + g_4 \frac{NCP_{it}}{Assets_{t-1}} \right]$$

The industry wise cross-sectional regressions are repeated for Model (6) to obtain the residuals which represent the long-term discretionary accruals (LTDA) for each firm.

The study uses the absolute values of the TDA, STDA and LTDA calculated in Model (4a), (5a) and 6(a) and compares them with their industry median to determine whether earnings management is practiced by the firms. Accordingly, the dummy variables TAEM, SAEM and LAEM are created to represent earnings management practices.

**4. RESULTS AND DISCUSSIONS**

**4.1. Data description**

The study relies upon the estimation of TDA, STDA and LTDA to determine the various types of earnings management. To calculate the same, the industry-wise cross-sectional regressions for Model (4), (5) and (6) are run using Ordinary Least Squares (OLS). In order to obtain unbiased estimates from the OLS regression, we exclude any observations from industries with less than 10 firms from the sample. The absolute values of TDA, STDA and LTDA derived from these regressions are used to categorise

Table 2. Description of variables

Variable	Description
$TA_{it}$	Total accruals of firm $i$ for year $t$
$NI_{it}$	Net income of firm $i$ for year $t$
$CFO_{it}$	Operating cash flows of firm $i$ for year $t$
$Assets_{it-1}$	Total assets of firm $i$ for the year $(t-1)$ .
$\Delta Rev_{it}$	Change in the sales of firm $i$ in year $t$ as compared to year $t-1$ .
$\Delta Rec_{it}$	Change in the accounts receivables of firm $i$ in year $t$ as compared to year $t-1$
$PPE_{it}$	Total property, plant and equipment of firm $i$ in year $t$ .
$ROA_{it}$	Return on Assets for firm $i$ in year $t$ calculated as net income divided by total assets.
$TDA_{it}$	Total discretionary Accruals
$STA_{it}$	Short-term accruals of firm $i$ for year $t$
$\Delta Inv_{it}$	Change in the inventory of firm $i$ in year $t$ as compared to year $t-1$
$\Delta OCA_{it}$	Change in the other current assets of firm $i$ in year $t$ as compared to year $t-1$
$\Delta AP_{it}$	Change in the accounts payable of firm $i$ in year $t$ as compared to year $t-1$
$\Delta TaxP_{it}$	Change in the tax provisions of firm $i$ in year $t$ as compared to year $t-1$
$\Delta OCL_{it}$	Change in the other current liabilities of firm $i$ in year $t$ as compared to year $t-1$
$STDA_{it}$	Short-term discretionary accruals of firm $i$ for year $t$
$LTA_{it}$	Long-term accruals of firm $i$ for year $t$
$LTDA_{it}$	Long-term discretionary accruals of firm $i$ for year $t$
$Intang_{it}$	Intangible assets of firm $i$ for year $t$
$NCP_{it}$	Non-current provisions of firm $i$ for year $t$
$g_1, \dots, g_n$	Industry specific coefficients
$e_{it}$	Error term

each firm as either practicing earnings management or not based on the industry median. The dummy variables TAEM, SAEM and LAEM are created accordingly.

The study covers Indian listed firms classified into 19 industries as per the NSE Indices Industry Classification Structure, 2022. Table 3 shows the number of observations in each industry which represent the earnings management practices through total, short-term and long-term discretionary accruals. Almost 50% of the observations in all the industries indicate AEM practices. There is no vast difference in the observations between the industries and therefore do not require further analysis. The classification based on the industries' use of the IndAS shows that more than 50% of the observations depict AEM under all three categories (TAEM, SAEM and LAEM). In the latter sections of the study, we carry out a sensitivity analysis to understand the impact

of IndAS implementation on value relevance through AEM.

#### 4.2. Univariate and bi-variate analysis

The descriptive statistics in table 4 proves that the sample is truly representative of the population of Indian listed firms as it includes firms with a wide range of stock prices, earnings, book value, size, leverage and growth levels. The mean for STDA is positive while that for LTDA is negative. This suggests that the sample firms use short-term discretionary accruals to improve their earnings and long-term discretionary accruals to reduce them. The study therefore undertakes the analysis of earnings management through both accruals and their impact separately.

The Pearson's Correlation coefficients for MVPS as the dependent variable and the core independent variables is presented in

Table 5. The correlation of EPS with MVPS reduces for firms with earning management via TDA and LTDA. Whereas, the correlation of BVPS increases for firms with EM via TDA and STDA. The findings are consistent with the common knowledge that the reliability of book values is going to

increase as the reliability of earnings reduces due to earnings management.

### 4.3. Hypotheses testing

The hypotheses of the study are tested using the proposed extended price value

Table 3: Earnings management practices among firms based on Industry classification and IndAS implementation

Industries	TAEM			SAEM			LAEM		
	Obs.	Total firms	%	Obs.	Total firms	%	Obs.	Total firms	%
<i>Automobile and Auto Components</i>	213	430	49.5	196	390	50.3	197	390	49.3
<i>Capital goods</i>	508	1,060	47.9	486	990	49.1	482	990	48.7
<i>Chemicals</i>	266	520	51.2	247	490	50.4	248	490	50.6
<i>Construction</i>	177	360	49.2	149	320	46.6	162	320	50.6
<i>Construction Materials</i>	135	270	50.0	114	220	51.8	116	220	52.7
<i>Consumer Durables</i>	123	260	47.3	138	260	53.1	132	260	48.9
<i>Consumer Services</i>	196	420	46.7	184	370	49.7	190	370	51.4
<i>Diversified</i>	174	340	51.2	153	290	52.8	149	290	51.4
<i>Fast Moving Consumer Goods</i>	263	540	48.7	256	530	48.3	267	530	51.3
<i>Forest Materials</i>	67	140	47.9	68	130	52.3	52	130	40.0
<i>Healthcare</i>	242	510	47.5	231	450	51.3	218	450	49.5
<i>Information Technology</i>	192	400	48.0	159	330	48.2	180	330	54.5
<i>Media, Entertainment &amp; Publication</i>	108	220	49.1	112	220	50.9	116	220	52.7
<i>Metals &amp; Mining</i>	203	420	48.3	187	390	47.9	170	390	44.7
<i>Oil, Gas &amp; Consumables</i>	88	180	48.9	84	170	49.4	87	170	51.2
<i>Power</i>	83	170	48.8	65	130	50.0	55	130	42.3
<i>Realty</i>	113	230	49.1	100	200	50.0	102	200	51.0
<i>Services</i>	166	340	48.8	134	260	51.5	121	260	46.5
<i>Textiles</i>	192	420	45.7	200	410	48.8	204	410	48.6
<b>Total</b>	<b>3,509</b>	<b>7,230</b>	<b>48.5</b>	<b>3,263</b>	<b>6,550</b>	<b>49.8</b>	<b>3,243</b>	<b>6,550</b>	<b>49.5</b>
<i>IndAS</i>	1,906	3,509	54.3	1,779	3,263	54.5	1,795	3,243	55.3

Table 4. Descriptive Statistics

Variables	No. of Observations	Mean	Std. dev.	Min	Max
<i>MVPS</i>	7,230	527.8	1770.3	0.95	41831.4
<i>EPS</i>	7,230	16.5	46.7	-378.6	814.78
<i>BVPS</i>	7,230	162.8	345.6	-450.1	14213.1
<i>Size</i>	7,230	7382.6	26811.5	25.7	879811
<i>Lev</i>	7,230	0.16	0.16	0.0001	5.28
<i>Growth</i>	7,230	1.46	35.93	-18.47	1721.73
<i>TDA</i>	7,230	-0.006	0.085	-0.791	1.827
<i>STDA</i>	6,550	0.005	0.117	-1.171	1.555
<i>LTDA</i>	6,550	-0.004	0.122	-1.687	1.235

Table 5. Correlation of earnings and book values with market value

	Correlation with MVPS	
	EPS	BVPS
<b>Sample for Total accruals earnings management</b>		
All firms	0.7588***	0.5694***
Firms with no earnings management via Total discretionary accruals	0.7845***	0.5256***
Firms with earnings management via Total discretionary accruals	0.7426***	0.6613***
<b>Sample for Short-term accruals earnings management</b>		
All firms	0.6877***	0.6612***
Firms with no earnings management via short-term discretionary accruals	0.6883***	0.6239***
Firms with earnings management via short-term discretionary accruals	0.6897***	0.6847***
<b>Sample for Long-term accruals earnings management</b>		
All firms	0.6880***	0.6612***
Firms with no earnings management via long-term discretionary accruals	0.7188***	0.6835***
Firms with earnings management via long-term discretionary accruals	0.6741***	0.6585***

relevance models and the sub-equations. Similar models have been used in the literature on value relevance. The available literature on value relevance mainly uses Fixed effects (FE) or Random Effects (RE) estimators on its panel data. Although these methods help control for several inequities and challenges posed by the data, they still fail to entirely address issues like endogeneity.

The price value relevance model, although widely used, suffers from endogeneity problems. The model's core independent variables, book value and earnings may be influenced by unobservable factors like investor sentiment or macroeconomic conditions that also indirectly affect the stock price. Even as the study adds earnings management through discretionary accruals in to the equation, the issue of simultaneity still prevails. Though we hypothesize that earnings management can influence stock prices, the reverse is also true. The incentive to boost stock prices can

also motivate managers to manipulate earnings. In order to address the endogeneity issues in the proposed models, the study uses a Two-Step System GMM estimator on dynamic panel models.

Earnings management undertaken through TDA do not have any significant impact on market price of firms (Table 6). Earnings on their own are value relevant even in the absence of TAEM while book value per share has no significant impact on firm value. TAEM has no significant impact on value relevance of earnings or book value. Irrespective of the insignificant results, it is important to note the signs on the coefficients for the interaction terms. The coefficient of  $EPS \times TAEM$  is negative (-0.311) signalling a negative impact on earnings while that for  $BVPS \times TAEM$  is positive (0.080) implying a positive impact on book value. Control variables are included in each of the model to check for robustness. Their coefficients have no significant relationship with value relevance.

It implies that earnings management drives the change in market values which is not mitigated by the control variables.

SAEM on its own does not have a very strong significant relationship with firm value (Table 7) but it exhibits a significant relationship when it interacts with the core variables. The statistically significant

negative coefficient for *EPSxSAEM* (-0.377) and *BVPSxSAEM* (-0.315) indicates that the value relevance of both EPS and BVPS decline in the presence of earnings management via short-term discretionary accruals.

The use of long-term discretionary accruals in earnings management is seen

Table 6. Results of Two-Step System GMM for Total Accruals Earnings Management

	Model 1a	Model 1b
EPS	0.85** (2.37)	0.335** (1.99)
BVPS	0.280 (0.75)	0.221 (0.55)
TAEM	0.295 (0.96)	-0.019 (1.70)
Size	-0.009 (0.56)	0.0002 (0.01)
Leverage	0.028 (1.18)	0.0005 (0.05)
Growth	0.0014 (0.42)	0.004 (0.99)
EPSxTAEM	-0.311 (0.92)	-----
BVPSxTAEM	-----	0.080 (0.53)
Year dummies	Included	Included
No. of groups	723	723
No. of instruments	32	24
F-statistic	8.69***	12.13***
AR(2) statistic (p-value)	0.52	0.256
Hansen test statistic (p-value)	0.11	0.13
Difference-in-Hansen test statistic (p-value)	0.16	0.12

Notes: Values in the parentheses are t-statistics based on White heteroscedasticity-consistent standards errors; \*\*\*p<0.01;

\*\*p<0.05, \*p<0.10; p-values reported for AR(2) and Hansen tests are at 5% level of significance.

Table 7. Results of Two-Step System GMM for Short-term Accruals Earnings Management

	Model 2a	Model 2b
EPS	0.388** (3.16)	0.852 (1.03)
BVPS	0.028 (0.36)	0.268*** (3.76)
SAEM	-0.0009 (0.09)	0.009 (0.94)
Size	-0.007 (1.16)	-0.006 (0.98)
Leverage	0.007 (1.16)	0.006 (1.20)
Growth	0.003 (1.32)	0.002 (1.22)
EPSxSAEM	-0.377*** (4.58)	-----
BVPSxSAEM	-----	-0.315*** (3.00)
Year dummies	Included	Included
No. of groups	655	655
No. of instruments	28	28
F-statistic	137.39***	180.90***
AR(2) statistic (p-value)	0.31	0.31
Hansen test statistic (p-value)	0.19	0.21
Difference-in-Hansen test statistic (p-value)	0.10	0.10

Notes: Values in the parentheses are t-statistics based on White heteroscedasticity-consistent standards errors; \*\*\*p<0.01;

\*\*p<0.05, \*p<0.10; p-values reported for AR(2) and Hansen tests are at 5% level of significance.

have to a negative impact on value relevance of both earnings and book value (Table 8). The dummy variable LAEM, on its own, has negative coefficients although not statistically significant. Earnings management through long-term discretionary accruals reduce value relevance of earnings (-0.36) and book values (-0.454). In fact, the negative impact is higher for book values than for earnings. While earnings management via short-term and long-term discretionary accruals both have a significant negative impact on value relevance of earnings, long-term discretionary accruals have a much higher impact on value relevance of book values.

In the presence of *IndAS*, *SAEM* and *LAEM* have a positive impact on firm value (Table 9). The *IndAS* variable itself has a significant negative coefficient. However, the influence of *IndAS* on value relevance of EPS in the presence of *TAEM* (*IndASxTAEMxEPS*) is significantly positive (0.084) while that on BVPS is not significant. On the other hand, *IndAS* appears to significantly counter the negative effects of *SAEM* and *TAEM* on the value relevance

of both *EPS* and *BVPS*. This implies that *IndAS* has a positive influence on the relationship between value relevance and the earnings management practices of the firm undertaken through total, short-term or long-term discretionary accruals.

## 5. CONCLUSION

This research involved the investigation of a relationship between the value relevance of accounting information of Indian listed firms and their earnings management practices with special consideration to their use of *IndAS*. The study finds that discretionary accruals provide better insights into earnings management when disintegrated into short-term and long-term accruals. The distinction lies in the use of these different components of accruals to either increase or decrease earnings to achieve different financial goals. The findings confirm that although total accruals management may not have a significant impact on value relevance, the short-term and long-term accruals management

Table 8. Results of Two-Step System GMM for Long-term Accruals Earnings Management

	Model 3a	Model 3b
EPS	0.215 (1.10)	0.021 (0.12)
BVPS	0.048 (0.30)	0.292 (1.72)
LAEM	-0.172 (0.83)	-0.040 (0.26)
Size	-0.003 (0.77)	-0.003 (0.73)
Leverage	0.006 (0.44)	0.006 (0.95)
Growth	-0.001 (1.03)	-0.002 (0.90)
EPSxLAEM	-0.360** (2.50)	-----
BVPSxLAEM	-----	-0.454*** (2.96)
Year dummies	Included	Included
No. of groups	655	655
No. of instruments	28	28
F-statistic	437.91***	286.56***
AR(2) statistic (p-value)	0.69	0.53
Hansen test statistic (p-value)	0.29	0.21
Difference-in-Hansen test statistic (p-value)	0.29	0.21

Notes: Values in the parentheses are t-statistics based on White heteroscedasticity-consistent standards errors; \*\*\*p<0.01; \*\*p<0.05, \*p<0.10; p-values reported for AR(2) and Hansen tests are at 5% level of significance.

Table 9. Results of Two-Step System GMM for impact of IFRS-convergence on Value relevance through Earnings Management

	Model 1c	Model 2c	Model 3c
EPS	0.324* (1.74)	0.106*** (3.83)	0.113*** (3.99)
BVPS	0.424 (1.27)	0.149*** (3.01)	0.147*** (2.95)
TAEM	-0.037 (0.86)	-----	-----
SAEM	-----	-0.049* (1.88)	-----
LAEM	-----	-----	-0.413* (1.69)
Size	-0.009 (0.85)	-0.007 (1.48)	-0.007 (1.45)
Leverage	-0.001 (0.12)	-0.005 (0.89)	-0.005 (0.94)
Growth	0.004 (0.68)	0.0016 (0.93)	0.0012 (0.68)
IndAS	-0.021 (0.51)	-0.085*** (3.37)	-0.066*** (2.79)
TAEMxEPS	-0.215** (1.92)	-----	-----
IndASxTAEMxEPS	0.084*** (0.95)	-----	-----
TAEMxBVPS	0.235 (0.19)	-----	-----
IndASxTAEMxBVPS	0.135 (0.92)	-----	-----
SAEMxEPS	-----	-0.003** (0.12)	-----
IndASxSAEMxEPS	-----	0.032** (1.30)	-----
SAEMxBVPS	-----	-0.080** (3.61)	-----
IndASxSAEMxBVPS	-----	0.012** (0.61)	-----
LAEMxEPS	-----	-----	-0.014** (0.61)
IndASxLAEMxEPS	-----	-----	0.037* (1.28)
LAEMxBVPS	-----	-----	-0.084** (2.55)
IndASxLAEMxBVPS	-----	-----	0.068** (1.54)
Year dummies	Included	Included	Included
No. of groups	723	655	655
No. of instruments	27	27	27
F-statistic	11.78***	224.39***	216.19***
AR(2) statistic (p-value)	0.20	0.43	0.44
Hansen test statistic (p-value)	0.12	0.13	0.20
Difference-in-Hansen test statistic (p-value)	0.18	0.30	0.45

Notes: Values in the parentheses are t-statistics based on White heteroscedasticity-consistent standards errors; \*\*\*p<0.01; \*\*p<0.05, \*p<0.10; p-values reported for AR(2) and Hansen tests are at 5% level of significance

significantly influence the market value. This supports the foundation of the study and its methodology of deconstructing total discretionary accruals into short-term and long-term for a more distinct analysis.

Based on previous literature (Whelan & Mcnamara, 2004; Al-Shattarat, 2021), the study hypothesised that managing earnings via long-term discretionary accruals will impact market value more strongly than through their short-term counterparts. The findings indicate partial acceptance of the second hypothesis. Long-term and short-term discretionary accruals play a similar role in reducing the reliability of earnings but the value relevance of book values is far more affected by LTDA than STDA.

With the introduction of the IFRS to the corporate world, more and more focus is on its role in improving financial reporting quality with relevance and reliability being the quality metrics of highest interest. It is therefore imperative to ascertain if the implementation of the IFRS-converged IndAS in India has played a positive role in reducing earnings management practices, thereby improving value relevance of accounting information. The interaction of the IndAS dummy variable with earnings management through short-term and long-term accruals has a significant positive impact on value relevance. It implies that the use of IndAS is influential in mitigating the effects of accruals earnings management on

the reliability and relevance of Indian financial reports.

The study provides an interesting insight into the realm of earnings management in Indian firms. It provides stakeholders the knowledge to decode available financial information to identify if its free from manipulations. Managers who are the agents between the firm and the stakeholders must take extra caution in presenting truthful information on earnings especially under the new standards. It provides the standard setters and regulators more precise findings on the use of short-term and long-term discretionary accruals in managing earnings. This promotes policy making with special focus on targeting those sources of earnings manipulation which have greater impact on firm value. Further research in this area can be extended into understanding different determinants of earnings management practices and how those may be reduced in order to improve value relevance.

## References

- Achleitner, A.K., Günther, N., Kaserer, C., & Siciliano, G. (2014). Real earnings management and accrual-based earnings management in family firms. *European Accounting Review*, 23 (3), 431–461.
- Agrawal, K., & Chatterjee, C. (2015). Earnings Management and Financial Distress: Evidence from India. *Global Business Review*, 16, 140–154.
- Al-Shattarat, B. (2021). The consequence of earnings management through discretionary accruals on the value relevance in Saudi Arabia. *Cogent Business & Management*, 8 (1), 1886473.
- Ball, R. (2006). International Financial Reporting Standards (IFRS): pros and cons for investors. *Accounting and Business Research*, 36 (1), 5–27.
- Bansal, M., & Garg, A. (2021). Do high-quality standards ensure higher accounting quality? A study in India. *Accounting Research Journal*, 34 (6), 597–613.
- Barth, M.E., Beaver, W.H., & Landsman, W.R. (2001). The relevance of the value relevance literature for financial accounting standard setting: another view. *Journal of Accounting and Economics*, 31 (1-3), 77-104.
- Barth, M.E., Li, K., & McClure, C.G. (2023). Evolution in Value Relevance of Accounting Information. *The Accounting Review*, 98 (1), 1–28.
- Beaver, W.H. (2002). Perspectives on Recent Capital Market Research. Source: *The Accounting Review*, 77 (2), 453–474.
- Callao, S., & Jarne, J.I. (2010). Have IFRS affected earnings management in the European Union? *Accounting in Europe*, 7 (2), 159–189.
- Chen, H., Tang, Q., Jiang, Y., & Lin, Z. (2010). The Role of International Financial Reporting Standards in Accounting Quality: Evidence from the European Union. *Journal of International Financial Management and Accounting*, 21 (3), 220–278.
- Christensen, H.B., Lee, E., Walker, M., & Zeng, C. (2015). Incentives or Standards: What Determines Accounting Quality Changes around IFRS Adoption? *European Accounting Review*, 24 (1), 31–61.
- Dechow, P.M., Sloan, R.G., & Sweeney, A.P. (1995). Detecting Earnings Management. *The Accounting Review*, 70 (2), 193–225.
- Ecker, F., Francis, J., Olsson, P., & Schipper, K. (2013). Estimation sample selection for discretionary accruals models. *Journal of Accounting and Economics*, 56 (2–3), 190–211.



## ВРЕДНОСНА РЕЛЕВАНТНОСТ УПРАВЉАНИХ ЗАРАДА У ИНДИЈСКИМ ФИРМАМА: АНАЛИЗА УТИЦАЈА КОНВЕРГЕНЦИЈЕ МСФИ КОРИШЋЕЊЕМ ДИНАМИЧКИХ ПАНЕЛ МОДЕЛА

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### Извод

Студија истражује однос између управљања зарадама и вредносне релевантности рачуноводствених информација индијских фирми које котирају на берзи истражујући три различита начина управљања зарадом – укупна, краткорочна и дугорочна дискрециона обрачунавања. Поред тога, студија истражује утицај конвергентних међународних стандарда финансијског извештавања (МСФИ), познатих као индијски рачуноводствени стандарди (ИндРС), на управљање зарадом, што заузврат утиче на релевантност вредности. Ова студија је прва у Индији која анализира различите ефекте управљања краткорочним и дугорочним зарадама на релевантност вредности и бави се питањем ендегености у моделу релевантности цене вредности кроз динамичко моделирање панела уз контролу употребе ИндРС. Студија проналази значајан ефекат управљања краткорочним и дугорочним обрачунским разграничењима на релевантност вредности и позитиван утицај ИндРС на однос између управљања зарадама и вредности фирме.

*Кључне речи:* управљање зарадама, релевантност вредности, МСФИ, ИндРС, дискрециона разграничења, ендегеност

Gakhar, D.V. (2014). Earnings management practices in India: A study of auditor's perception. *Journal of Financial Crime*, 21 (1), 100–110.

Ghalke, A., Chakravorty, C., & Rao, S.V. D. N. (2018). Earnings management in IPO bound firms: Evidence from Indian SME exchanges. *Asian Economic and Financial Review*, 8 (8), 1126–1139.

Ghazali, A.W., Shafie, N.A., & Sanusi, Z.M. (2015). Earnings Management: An Analysis of Opportunistic Behaviour, Monitoring Mechanism and Financial Distress. *Procedia Economics and Finance*, 28, 190–201.

Goel, S. (2018). Earnings management in corporate enterprises in India: A test for multi-nationality, reputation and related

variables. *International Journal of Emerging Markets*, 13 (6), 1820–1834.

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

Jackson, A.B. (2018). Discretionary Accruals: Earnings Management.. or Not? *Abacus*, 54(2), 136–153.

Jones, J.J. (1991). Earnings Management During Import Relief Investigations. *Journal of Accounting Research*, 29 (2), 193–228.

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

Kouki, A. (2018a). IFRS and value relevance: A comparison approach before and after IFRS conversion in the European

- countries. *Journal of Applied Accounting Research*, 19 (1), 60–80.
- Kouki, A. (2018b). Mandatory IFRS adoption, investor protection and earnings management: A data analysis of Germany, France and Belgium listed companies. *International Journal of Accounting and Information Management*, 26 (1), 187–204.
- Lee, H.Y., & Son, M. (2009). Earnings announcement timing and earnings management. *Applied Financial Economics*, 19 (4), 319–326.
- Marquardt, C.A., & Wiedman, C.I. (2004). The effect of earnings management on the value relevance of accounting information. *Journal of Business Finance and Accounting*, 31(3–4), 297–332.
- Nagar, N., & Sen, K. (2016). Earnings management in India: Managers' fixation on operating profits. *Journal of International Accounting, Auditing and Taxation*, 26, 1–12.
- Noronha, C., Zeng, Y., & Vinten, G. (2008). Earnings management in China: An exploratory study. *Managerial Auditing Journal*, 23 (4), 367–385.
- Ohlson, J.A. (1995). Earnings, book values and dividends in equity valuation. *Contemporary Accounting Research*, 11 (2), 661–687.
- Ratnaningrum, R., Rahmawati, R., Djuminah, D., & Widagdo, A. K. (2021). The Value Relevance of Earnings in the Presence of Earnings Management: Indonesia as Evidence. *Global Business Review*, in press.
- Soliman, W.S.M.K., & Ali, K.M. (2020). An investigation of the value relevance of deferred tax: the mediating effect of earnings management. *Investment Management and Financial Innovations*, 17 (1), 317–328.
- Shette, R., Kuntluru, S., & Korivi, S.R. (2016). Opportunistic earnings management during initial public offerings: Evidence from India. *Review of Accounting and Finance*, 15 (3), 352–371.
- Whelan, C., & McNamara, R. (2004). The Impact of Earnings Management on the Value-relevance of Financial Statement Information. Retrieved from: <https://ssrn.com/abstract=585704>
- Zeghal, D., Chtourou, S.M., & Fourati, Y.M. (2012). The effect of mandatory adoption of IFRS on earnings quality: Evidence from the European union. *Journal of International Accounting Research*, 11 (2), 1–25.