

EXAMINATION OF THE CONVERGENCE ROUTE TO IFRS REPORTING AND DISCLOSURE

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Abstract

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Value relevance (VR) of earnings and book value of equity is studied in a setting where the International Financial Reporting Standards (IFRS) have been adopted through a convergence and customization route. Quantile regression methodology is applied to level and return models. We find no significant increase in VR of earnings or book equity. Smaller firms show some sensitivity to the change in the regime as compared to the largest set of firms, though accounting metrics overall, help explain the value of larger firms better. We conclude that the convergence route leads to continuous, incremental benefits over the pre-adoption period which pre-empts any significant increase in VR upon IFRS adoption. Gradual convergence with IFRS supported by positive, investor-friendly changes (Roca, 2021) to existing institutional and regulatory frameworks over time, results in better adoption and early, continuous capture of value, though the process itself is long drawn out. More research is needed to test the relevance of alternate metrics in the current technology and intangibles-driven economies (Barth, Li, & McClure, 2021). India's unique approach to IFRS adoption may hold lessons for all IFRS adopters across the world while responding to new/revised standards in the future. This is the first comprehensive study on the value relevance and information content of the Indian Accounting Standards (Ind AS).

Keywords: IFRS, Ind AS, Value Relevance, Convergence, Financial Reporting

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1. INTRODUCTION

This study examines the effect of the Indian Accounting Standards (Ind AS) on the value relevance (VR) of reported earnings and equity. The process of convergence of the Ind AS with the IFRS was initiated in 2006 by the Institute of Chartered Accountants of India (ICAI, 2018). Adoption of the Ind AS — India's customized version of the IFRS — was finally mandated to be implemented in a phased manner for Indian companies only from April 1st, 2016 (the fiscal year 2017). Since the European Union (EU) mandated

the IFRS standards in 2005, there has been a lot of debate and academic research on whether the IFRS has served its purpose of perpetuating high-quality global accounting standards. Existing studies show mixed evidence for the impact of the IFRS adoption on the quality of financial reporting using measures such as VR of accounting information and earnings management intensity, to name a few.

Most research in the initial years of the IFRS adoption concluded significant benefits accruing to the adopters (De George, Li, & Shivakumar, 2016) but as more jurisdictions adopted the IFRS, country-specific and cross-country research increased,

providing evidence that improvements in accounting quality were not similar or uniform, including within the EU (Devalle, Onali, & Magarini, 2010), and not all documented benefits could be attributed to the IFRS adoption per se. Additional factors such as a country's financial, tax, and legal systems (Ali & Hwang, 2000; van Tendeloo & Vanstraelen, 2005), enforcement and governance mechanisms (Daske, Hail, Leuz, & Verdi, 2008; Mohammadrezaei, Mohd-Saleh, & Banimahd, 2015), managerial incentives for accounting disclosure (Ahmed, Neel, & Wang, 2013; Daske, Hail, Leuz, & Verdi, 2013; Black & Nakao, 2017), as well as other institutional, social, political and economic factors (Fox, Hannah, Helliari, & Veneziani, 2013) have been seen to moderate the quality of financial reporting.

Research on VR of the IFRS adoption in emerging markets (EM) has seen interest and this study adds to this still small but growing repository. Questions have been raised on whether developing countries could benefit by simply adopting high-quality accounting standards, given their underdeveloped institutional infrastructures such as law enforcement, depth of financial markets, and quality of investor protection (Ball, Robin, & Wu, 2003; Hope, 2003). However, India may not fit into such characterizations. India's stock market regulatory agency, the Securities and Exchange Board of India (SEBI), has been proactively mandating additional disclosure requirements for listed companies in the interest of transparency, investor protection, and greater trust in the financial markets. As one of the largest and fastest-growing economies, India has also been successfully attracting a significant amount of foreign portfolio investments (FPIs); in the fiscal year 2021, for instance, India attracted a record net inflow of USD 37 billion from foreign portfolio investors who were net sellers during the same period in most emerging markets. This study, therefore, acquires significance as it is one of the first to examine VR of the IFRS (or converged standards) adoption in an emerging market of the size, potential, and robustness that India represents.

This study is also interesting because India, while being a late entrant to the IFRS also took the path less followed — that of convergence rather than a one-shot, as-is adoption of IFRS — besides China, Thailand, and Indonesia. Countries that have tailored the IFRS to their country-specific requirements either via convergence or in a modified form constitute 9% of the total number of jurisdictions adopting the IFRS (Song & Trimble, 2020). While India had started the process of harmonizing its accounting standards with the pre-2004 International Accounting Standards (IAS) as early as in 1997, the initiative of harmonizing the Indian Accounting Standards with the IFRS was taken in the year 2001 and it was only in 2015 that India mandated a timeline for the implementation of Ind AS starting from the financial year 2016–2017 (Krishnan, 2016). India has had a fairly long-drawn process of convergence with the IFRS, which has been marked with both decision dilemmas as well as reforms that respectively delayed and helped the convergence process (Appendix A). The process is ongoing, with more companies, especially banks and insurance companies yet to implement the Ind AS on the one

hand and inconsistencies in laws, regulations, and procedures that affect industry being addressed and ironed out, on the other (Appendix B).

The Indian Accounting Standards (referred to as Indian GAAP or IGAAP) which were in place before the Ind AS were based on pre-2004 IAS and hence IFRS-convergence represents a major qualitative change (Ghosh, 2019). Ghosh (2019) compares numbers reported under IGAAP and Ind AS respectively for the first year of transition to assess the impact on the book value of equity. There are no studies to the knowledge of the authors that test for VR of financials reported as per the Ind AS. Our study is not only the first one of this kind in India but also contributes to the small repository of impact studies on IFRS through convergence and/or modification. It especially helps compare the benefits and effectiveness of the convergence route that accumulates benefits over time with a one-shot adoption of the IFRS. We postulate that the process of convergence that included early notification of the new standards in the year 2011 (though given effect to only in 2016) as well as the general improvement in the regulatory and enforcement framework which preceded the implementation of a global standard had improved VR of accounting information over time (Kumari & Mishra, 2018) and incremental improvement in VR on implementation, therefore, will be at best, marginal.

We examine incremental VR of accounting information under the IFRS by using Ohlson's (1995) price and return models as also a market capitalization model (m-cap model). We use quantile regression models to not only provide more robust estimates but also for nuanced insights. By using single country data, this study enables to compare firms that operate in the same political, economic, social, and regulatory environment. It uses data from the pre- and post-adoption years — the latter further split into transition and stabilization periods — to find clear evidence on VR change from one period to another. While the study uses single country data, it acquires international significance as it is focused on the impact of gradual adoption of standards as against one-shot adoption which most jurisdictions followed.

As hypothesized, our results for India show an almost insignificant change in VR over the period of study. In line with extant literature, we find that the explanatory power of aggregate accounting information in explaining variation in market value is more for larger firms than the smaller ones. However, our results diverge from prior studies to show that market valuation of smaller firms has been more sensitive to changes in accounting regimes, though the net change in VR has been insignificant. Specifically, the shift to Ind AS has resulted in some improvement in VR of earnings during the transition period, which has been more than wiped out in the later years. This too has been seen only among the smaller and medium capitalized firms. We attribute this result to an incremental build-up of benefits due to institutional and regulatory improvements over the convergence period. While we believe that these benefits of convergence may be more deep-seated, future research with a larger cross-section of firms over a longer period is needed to validate it. Our

study validates the findings of prior studies that it is not the IFRS per se that impacts VR but other factors including regulatory and enforcement mechanisms. It helps give direction to regulators and standard-setting bodies on how to derive benefits from a country-specific adaptation of high-quality standards without compromising on quality. The convergence or customization route has also been given “veiled endorsement” by decision-makers in countries such as the USA (Whitehouse, 2011).

The remainder of the article is structured as follows. Section 2 reviews the academic literature and formulates hypotheses. Section 3 describes the methodology and data used for analysis. Section 4 presents the results and discussion and Section 5 concludes the research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Information is relevant if it is useful for decision-making; financial information should have predictive or confirmatory value to be used for decision-making. The central focus of much of the research on the quality of accounting information is value relevance (VR). Kothari and Wasley (2019) refer to Ball and Brown's (1968) work as the first study on VR that found accounting earnings to be meaningful and valued positively by investors at a time when it was generally viewed that accounting numbers did not hold any meaningful information. VR has been defined as “the ability of an accounting measure to capture or summarize information impounded in market prices” and in most VR studies, book value and earnings have been used as the summary descriptors of value (Hung, 2000, p. 402).

Song and Trimble (2020), while tracing the history of the adoption of the IFRS, have noted that out of the 123 countries that have an identifiable IFRS adoption date, most (73% or 59%) had adopted the IFRS in 2005 or earlier; the next largest number of adoptions being in 2012. Research studies published up to the year 2008 studied voluntary adoption and subsequent studies covered both voluntary and mandatory adoptions (De George et al., 2016). Barth, Landsman, and Lang (2008) studied a sample of firms from 21 countries that had adopted IAS between 1994 and 2003 and found lesser earnings management, timely loss recognition, and higher VR in them. They also found improvement in the quality of accounting in the post-adoption period. Christensen, Lee, Walker, and Zeng (2015) found that the improvement in accounting quality was confined to voluntary adopters which brought to the fore the significance of reporting incentives of managers.

Capkun, Collins, and Jeanjean (2016) later countered Barth et al. (2008) and Christensen et al. (2015) to bring to the fore the flexibility of principles-based standards and the lack of implementation guidance which explained the persistence of earnings smoothing among firms that included early, late as well as mandatory adopters.

An empirical assessment of the IFRS adoption has predominantly been done by testing VR of change in reported earnings and the book value of equity, respectively. A meta-analysis by Ahmed, Chalmers, and Khelif (2013) found VR of the book

value of equity to have reduced post the IFRS adoption for mandatory adopters while increasing for the voluntary ones; VR of earnings saw the diametrically opposite effect. VR of earnings has commonly been tested using price and return models. Studies have typically found increased VR when using the price model and either reduced or no VR when using the returns model (Iatridis & Rouvolis, 2010; Chalmers, Clinch, & Godfrey, 2011). Ahmed et al. (2013) found VR of earnings to have increased when tested using price models. Cases of lower value relevance of IAS/IFRS over local accounting standards have also been documented, for instance, in the case of Italy (Rotili, Giosi, & Ceccobelli, 2019). A recent study by Barth et al. (2021) finds that the value relevance of earnings has reduced over time although that of combined accounting metrics has not. “New-economy measures” such as intangible assets and growth prospects have emerged as more value relevant.

2.1. Value relevance of IFRS adoption: Studies from emerging markets

Studies testing VR of the IFRS in emerging markets (EMs) have given varying results and often for the same country or region. Morais, Fialho, and Dionisio (2018) classify these studies into three categories — those showing an increase in VR, those showing a decrease in VR, and those evidencing the role of institutional factors in improved VR — and find studies done on the same country or region under each of these classifications. For instance, studies from Greece by Iatridis and Rouvolis (2010), Negakis (2013), and Papadatos and Bellas (2011), respectively belong to these three categories. Kim (2013) concluded higher VR in Russian firms reporting under the IFRS when compared with a sample that reported under the Russian Accounting Standards while Garanina and Kormiltseva (2014) did not find any such difference. Chebaane and Othman (2014) found an increase in VR in a study covering UAE, Qatar, Turkey, and South Africa (all EMs) as also Bahrain, Jordan, and Kuwait. Alali and Foote's (2012) study covered Abu Dhabi (part of the UAE) and found an increase in VR until 2005 but not in 2005 and 2006, which they attributed to a low tendency period.

Such variance in results has intrigued many a researcher and has spawned various strands of research on the impact of change in accounting standards on VR. Some of these important strands specific to EMs include differences in legal regime (Clarkson, Hanna, Richardson, & Thompson, 2011) and quality of local GAAP (Lin, Riccardi, & Wang, 2012; Wu, Hsieh, Yu, & Chu, 2017) besides those in common with developed markets like voluntary adoption versus mandatory adoption (De George et al., 2016) and other factors such as level of enforcement, institutional setting, and economic incentives of firms (Capkun et al., 2016). Doubts have been raised about the benefits of the IFRS adoption for developing countries given their weak institutional structures (Ball et al., 2003; Ball, 2006). However, studies like Houqe and Monem (2016) that found evidence of the lower perception of corruption over time show direct or indirect benefits of the IFRS adoption.

For the countries that have opted for convergence or modified IFRS, while some studies have found improvements in VR and earnings quality — China (Li & Guo, 2016), Indonesia (Prihatni, Subroto, Saraswati, & Purnomosidi, 2018), Malaysia (Abdullah, Evans, Fraser, & Tsalavoutas, 2015), Brazil, Chile and Mexico (Rodríguez García, Cortez Alejandro, Méndez Sáenz, & Garza Sánchez, 2017), others have found nil or reduced incremental VR for the same regions — Ismail, van Zijl, and Dunstan (2010) and Mirza, Malek, and Abdul-Hamid (2019) for Malaysia, Eng, Lin, and De Figueiredo (2019) for Brazil, Rodríguez García et al. (2017) and Roca (2021) for Argentina. The beneficiary countries appear to have benefitted from taking time to improve their institutional setting, reform regulatory and legal framework, strengthen enforcement and identify the required modifications/carve-outs to the IFRS that would best suit their cultural and economic environment. Insignificant or reduced VR has been attributed to differences in the economic environment, the difference in incentive to comply (Black & Nakao, 2017), functioning of markets, imperfect enforcement mechanisms, and weak shareholder protection (Roca, 2021). Studies have shown that fair value numbers are value relevant if obtained from deep, liquid markets and where the investor protection mechanisms are strong (Fiechter & Novotny-Farkas, 2017; Siekkinen, 2016).

Besides, transitioning from one high-quality standard to another may show up as no improvement in VR as found by Wu et al. (2017) in the case of Taiwan. In the case of Brazil, Eng et al. (2019) found improvements in value relevance of earnings with the IFRS adoption but no improvement in information content.

An important facet of India's progression towards the IFRS standards has been its choice of a custom mode rather than an end-to-end as-is adoption of the standards. As per the ICAI (2007), the converged standards in India (Ind AS) are allowed to depart from the IFRS to account for local differences, while not diluting the spirit of the IFRS. This is clear from the fact that all the amendments to the IFRS that were issued by the International Accounting Standards Board (IASB) after the notification of Ind AS in 2015 (including revenue recognition, leasing, and share-based payments) have been incorporated into Ind AS.

2.2. IFRS in India

The initiative to harmonize the Indian Accounting Standards with the IFRS was taken as early as 2001, and the first set of IFRS-converged accounting standards was notified by the Government of India in 2006 (ICAI, 2018). India's stance has always been of convergence, with convergence defined as "to design and maintain national accounting standards in a way that financial statements prepared in accordance with national accounting standards draw unreserved statement of compliance with IFRSs" (ICAI, 2007, Part 2, p. 12). This required parallel actions on the ground towards 1) identifying carve-ins and carve-outs while drafting the new standards; 2) making suitable amendments to laws such as the Indian Companies Act and Income Tax Act to align with new standards and 3) to amend

the disclosure and other compliance requirements of multiple regulators such as the Reserve Bank of India (RBI) for banks, Securities Exchange Board of India (SEBI) for listed companies and Insurance Regulatory and Development Authority of India (IRDAI) for insurance companies in line with the new accounting standards. These are detailed in Appendix A and Appendix B.

The IFRS-converged standards were ready to be applied in phases from 2011, but the implementation was delayed twice and finally came into effect from April 1st, 2016. Companies with a net worth over INR 5 billion¹ excluding those from the financial and electricity generation sectors were to mandatorily report as per Ind AS in Phase 1 of the roll-out. Subsequently, companies with a net worth between INR 2.5 billion and INR 5 billion were included with effect from April 1st, 2017. For banks and insurance companies, the effective date has been deferred due to multiple reasons, the latest being the instability caused by the COVID-19 pandemic.

While studies have looked at the impact of the IFRS on equity, earnings, and financial ratios of companies in India there has been only one study that has tested VR of IFRS-based reporting in Indian companies. Bedia and Shrivastava (2020) have examined the issue of value relevance of IFRS reporting in the context of voluntary adopters that were listed on overseas stock exchanges and were reporting as per IFRS to meet the overseas listing requirements. In line with international studies of voluntary adopters, they found an increase in VR of accounting information.

Besides, there have been few studies that have examined VR of reported earnings, the book value of equity, and other metrics on a diversified set of Indian companies, but none of these studies includes the post-Ind AS period. Hence, they do not provide any insight into change in VR due to regime shifts. Kumari and Mishra (2018) covered 21 years from 1995 to 2015 (pre-Ind AS) and found an increase in the combined VR of earnings and book value. The incremental VR of earnings though decreased with time, unlike the VR of the book value of equity. Mulenga and Bhatia (2020a) use a relatively small sample of the Nifty 100 index and find VR of both earnings and book value of equity among Indian firms over the period of 2001 to 2015.

The only study on the impact of Ind AS is by Ghosh (2019) that covers a sample of 100 non-financial companies that had adopted Ind AS for the first time in Phase 1 of its rollout. The study covers a one-year period and compares accounting metrics reported as per domestic GAAP (IGAAP) with corresponding numbers as per Ind AS as of March 31st, 2016. The study found that Ind AS adjustments resulted in higher equity numbers as compared to IGAAP and that the size of equity was a significant factor in explaining changes in equity caused by IFRS convergence. This is in line with the ICAI (2018) report that examined the aggregate impact of Ind AS on earnings (profits after tax) for the financial years 2016-2017 and the book value of equity as of April 1st, 2016 for 170 listed companies spread across 15 sectors that were part of the mandatory adopters in Phase 1 of Ind AS rollout.

¹ INR 5 billion is approximately USD 68.5 million at an exchange rate of 1 USD = 73 INR, the median exchange rate over the period October 2020 to March 2021.

The net (increases minus decreases) earnings were negligible in the aggregate but sector-wise impacts were more pronounced. The impact of Ind AS adoption on aggregate book equity was a marginal positive. This survey report also documents that majority of companies believe that Ind AS (and the journey towards it) has improved their corporate governance and other control processes. These studies, however, did not test for change in VR under the new reporting standards. Besides, they covered only one year of results and hence, were at best, static.

Kumari and Mishra (2018) concluded that the slow and steady improvement in VR of earnings and equity demonstrated over time in their study was in line with improvements arising from reforms — institutional, regulatory, company policies and practices leading to better governance and reporting — as well as the anticipation of better, transparent reporting, was already being factored in the market prices. The last phase (2012–2015) of their study overlaps with the pre-Ind AS period used in our study. We believe that this “creeping increase” in VR seen over the previous decade would have pre-empted any significant jump in VR (a “shock effect”) for the post-Ind AS period when Ind AS was made mandatory for the first set of firms. Kwon (2019) reported a decrease in VR of financial information over the period 1999–2013 across 624 American firms due to greater digitalization and alterations in the financial reporting environment over time, while Hao, Sun, and Yin (2019) reported a more pronounced reduction in accounting quality of IFRS-based reporting among Chinese firms that belonged to regions with lower development of the legal environment; China is one of the few countries that took the convergence path to the IFRS. These findings together, further lend credence to our hypothesis that the impact of Ind AS rollout in terms of VR, if at all, will not be very significant for the case of India. This hypothesis also finds support in Mulenga and Bhatia (2020b) who report a decline, though insignificant, in the combined VR of earnings and book value of equity in their study of Indian pharmaceutical companies. On these lines, our hypotheses for this study are:

H1: Incremental VR of reported earnings upon Ind AS implementation after a period of convergence will be low in magnitude and significance.

H2: Incremental VR of the book value of equity upon Ind AS implementation after a period of convergence will be low in magnitude and significance.

This study also contributes to the literature on VR of reported consolidated statements from countries adopting the modified/converged IFRS accounting standards.

3. RESEARCH DESIGN AND METHODOLOGY

This article uses three models for testing incremental VR of earnings and equity upon Ind AS implementation. These are Ohlson’s price and return models — the most used empirical model in VR studies (Kothari & Wasley, 2019) — and the market capitalization model (m-cap model). The price model expresses share price three months from the close of the financial year as a function of earnings per share (EPS), the book value of equity per share (BVPS), and dummy variable(s) that separate pre- and

post-Ind AS periods (Devalle et al., 2010; Chalmers et al., 2011; Roca, 2021). The basic exposition is equation (1) below:

$$P_{i(t+3)} = \alpha_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} + \beta_3 POST + \beta_4 POST * EPS_{it} + \beta_5 POST * BVPS_{it} + \varepsilon_{it} \quad (1)$$

The lagged price assumes the time lag for declaration of annual accounts and for the market to price in the information (Sotti, 2017). The post-Ind AS period (POST) takes the value 1 for the fiscal years 2016–2019, for which accounting information as per Ind AS standards is used, and 0 for the prior period where IGAAP prevailed. While β_3 compares the average price per share between the pre- and post-Ind AS years, β_4 and β_5 indicate the statistical significance of the relative asymmetry in VR of earnings and equity respectively in the post-Ind AS period. They are the variables of interest to establish incremental VR of earnings and equity.

On similar lines, the return model expresses equity returns over a holding period of the financial year plus three months as a function of earnings and change in earnings that are scaled by the beginning of the year price (equation (2)).

$$\begin{aligned} P_{i(t+3)}/P_{i(t-12)} = & \alpha_0 + \beta_1 EPS_{it}/P_{i(t-12)} + \\ & + \beta_2 \Delta EPS_{it}/P_{i(t-12)} + \beta_3 POST + \beta_4 POST * \\ & EPS_{it}/P_{i(t-12)} + \beta_5 POST * \Delta EPS_{it}/P_{i(t-12)} \end{aligned} \quad (2)$$

The m-cap model (equation (3)) uses aggregate variables instead of per-share variables. This is a variation on the model proposed by Rodríguez Garcia et al. (2017) where market capitalization is regressed on operating profits (EBIT) and the book value of equity (EQUITY), all deflated by beginning-of-year assets.

$$\begin{aligned} MCAP_{it}/TA_{t-12} = & \alpha_0 + \beta_1 EBIT_t/TA_{(t-12)} + \\ & + \beta_2 EQUITY_t/TA_{(t-12)} + \beta_3 POST + \beta_4 POST * \\ & EBIT_t/TA_{(t-12)} + \beta_5 POST * EQUITY_t/TA_{(t-12)} + \varepsilon_{it} \end{aligned} \quad (3)$$

All the above models are further run after splitting the post-Ind AS period into D1 (2016, 2017) and D2 (2018, 2019) — the transition and stabilization periods, respectively — in order to gather more nuanced insights. D1 has a value of 1 for the years 2016, 2017 and a value of 0 for the pre-Ind AS years (2013–2015) as well as for the years 2018, 2019. Similarly, D2 has a value of 1 for the years 2018, 2019 and 0 for all the others.

Our data comprises data for a cross-section of firms across specific years, on which a panel data regression is an obvious choice to employ. However, panel regressions assume heterogeneity at the unit level (intercept terms) but homogeneity in slopes across the units. When there is a reason to believe that the latter may not hold (which can happen when the number of cross-sections is large as per Buchinsky, 1995), running panel regressions on sub-groups of the data may help strike a balance between individual regressions and a single regression on the entire panel data. Ordinary least squares (OLS) and panel least squares (PLS) regression models also assume normality and homoscedastic regression errors as they cluster data around the mean. Heteroscedasticity is commonly resolved using a generalized least squares (GLS) regression. This transforms the original

variables with no guarantee of completely removing heteroscedasticity. Applying White's heteroscedasticity-robust estimator is another common approach that has proven more effective (Roca, 2021) but is said to give more conservative results (Kalina, Vasanicová, & Litavcová, 2019). Besides, the OLS regression model is unable to handle outliers; it assumes that a single model fits every case. In such a situation, outliers are typically removed, leading to the loss of precious information (Hao & Naiman, 2007).

This article employs the quantile regression methodology to manage the above-mentioned issues and also accommodate possible outliers, thus providing group-level insights. Most of all, quantile regressions have been found to provide robust estimators even under conditions of multicollinearity (Kalina et al., 2019). The quantile regressions are run at the 25th percentile, the median, and the 75th percentile of firms in the sample for all three models mentioned above. Additionally, they are run on the m-cap model as well, while controlling for firm-level variables as in Rodríguez García et al. (2017). PLS regressions are also provided for comparison.

4. SAMPLE AND DATA

Our sample consists of Indian firms from the non-financial and non-electricity generation sectors listed on the National Stock Exchange of India (NSE) that presented accounting results as per Ind AS from the fiscal years 2016–2017. The regulator had mandated such firms to also provide comparable Ind AS accounting data for the previous year as well. Using consolidated accounting statement data across seven years, this article divides the period into three parts — financial years 2016 and 2017, labelled as the transition period; 2018 and 2019,

labelled as the stabilization period and three periods immediately before the fiscal year 2016 for which a company had at least 12 months in a reporting period. Many companies changed their reporting year during the pre-Ind AS years to align with the April-March financial year that is normally followed in India. This led to some firms having interim reporting periods of less than 12 months. On the other hand, some firms have reporting periods of 15 or 18 months during such changeover. In such cases, we have taken a prior year so as to have three accounting periods of at least 12 months for the pre-Ind AS period. For the sake of consistent labelling, we have used Pre(-3), Pre(-2), and Pre(-1) to represent these three prior periods. T1, T2, S1, S2 indicate the two transition and two stabilization years, respectively. For most companies in the sample, the three prior periods are the three financial years 2013, 2014, and 2015. We call this the pre-adoption period. Removing some observations on account of missing data leaves us with an unbalanced panel of 1985 company-year observations. All accounting and market information has been taken from the Centre for Monitoring Indian Economy (CMIE) Prowess database. The dataset has been completed for missing accounting information taken from the annual reports of the companies.

Table 1 describes our sample by year and industry. The industry classifications provided by the CMIE were found to be too granular to provide any meaningful comparison. The authors have combined these classifications to finally have thirteen categories across the 269 companies in the sample. Consumer goods and construction are the dominant sectors in the sample accounting for 14.6% and 13.8%, respectively. The top four sectors account for close to 50% of the observations in the sample.

Table 1. Distribution of data by fiscal year and industry

| Sector | Fiscal year | | | | | | | |
|-----------------------------|-------------|---------|---------|-----------|-----------|-----------|-----------|-------|
| | Pre(-3) | Pre(-2) | Pre(-1) | 2016 (T1) | 2017 (T2) | 2018 (S1) | 2019 (S2) | Total |
| Consumer goods | 40 | 42 | 42 | 42 | 42 | 42 | 39 | 289 |
| Construction | 40 | 39 | 39 | 39 | 40 | 40 | 37 | 274 |
| Manufacturing | 36 | 35 | 35 | 34 | 36 | 35 | 34 | 245 |
| Services | 25 | 26 | 26 | 25 | 26 | 26 | 24 | 178 |
| Metals | 20 | 22 | 22 | 22 | 22 | 22 | 22 | 154 |
| Healthcare and pharma | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 147 |
| Information technology (IT) | 21 | 20 | 21 | 19 | 21 | 21 | 19 | 142 |
| Chemicals | 18 | 19 | 19 | 19 | 19 | 19 | 18 | 131 |
| Automotive | 18 | 18 | 18 | 17 | 18 | 18 | 18 | 125 |
| Power | 15 | 16 | 16 | 16 | 16 | 16 | 16 | 111 |
| Media and telecommunication | 12 | 13 | 13 | 13 | 13 | 13 | 13 | 90 |
| Cement | 7 | 9 | 9 | 8 | 9 | 9 | 8 | 59 |
| Oil and gas | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 42 |
| Total | 279 | 286 | 287 | 281 | 289 | 288 | 275 | 1985 |

Notes: Pre(-t) refers to the t-th year before Ind AS implementation; T(t) refers to the t-th year of the transition period; S(t) refers to the t-th year of the stabilization period.

Table 2. Mean values of variables across stages of Ind AS adoption

| Variable | Pre-Ind AS period | Transition period | Stabilization period | p-value of ANOVA test |
|-------------|-------------------|-------------------|----------------------|-----------------------|
| $P_{(t+3)}$ | 414.75 | 690.39 | 858.81 | 0.03** |
| EPS | 25.11 | 30.41 | 31.58 | 0.76 |
| BVPS | 199 | 240 | 272 | 0.40 |
| MCAP | 157316 | 200196 | 257053 | 0.004*** |
| PAT | 7923 | 8192 | 10104 | 0.47 |
| EBIT | 16220 | 17225 | 21640 | 0.15 |
| TA | 184409 | 225037 | 271889 | 0.03** |
| EQUITY | 69209 | 83818 | 99475 | 0.05* |
| SALES | 123673 | 129153 | 162303 | 0.18 |

Notes: All values are in INR million except for per share metrics that are expressed in INR.

*, **, *** indicate statistical significance at the 10%, 5%, 1% level, respectively.

An ANOVA on the mean values (Table 2) of variables used in this study indicates that while there is no significant difference in the key earnings variables (*EPS*, *PAT*, *EBIT*) and equity variables (*BVPS*, *EQUITY*) across the three periods, the difference in market values ($P_{(t)}$, *MCAP*) and size (*TA*, *EQUITY*) is statistically significant. However,

the correlation matrix in Table 3 shows a high correlation among earnings, equity, and the stock price at the per share and them at the aggregate levels separately. Interestingly though, the per-share metrics (*EPS*, *BVPS*, $P_{(t)}$) show a very low correlation with their aggregate counterparts (*PAT*, *EQUITY*, *MCAP*), respectively.

Table 3. Correlation matrix

| | $P_{(t)}$ | <i>EPS</i> | <i>BVPS</i> | <i>PAT</i> | <i>EBIT</i> | <i>MCAP</i> | <i>SALES</i> | <i>ASSETS</i> | <i>EQUITY</i> | <i>LEVG.</i> |
|---------------|-----------|------------|-------------|------------|-------------|-------------|--------------|---------------|---------------|--------------|
| $P_{(t)}$ | 1.00 | | | | | | | | | |
| <i>EPS</i> | 0.90 | 1.00 | | | | | | | | |
| <i>BVPS</i> | 0.91 | 0.94 | 1.00 | | | | | | | |
| <i>PAT</i> | 0.05 | 0.08 | 0.04 | 1.00 | | | | | | |
| <i>EBIT</i> | 0.04 | 0.06 | 0.04 | 0.95 | 1.00 | | | | | |
| <i>MCAP</i> | 0.08 | 0.07 | 0.04 | 0.83 | 0.83 | 1.00 | | | | |
| <i>SALES</i> | 0.02 | 0.04 | 0.04 | 0.68 | 0.79 | 0.65 | 1.00 | | | |
| <i>ASSETS</i> | 0.00 | 0.01 | 0.02 | 0.68 | 0.82 | 0.65 | 0.87 | 1.00 | | |
| <i>EQUITY</i> | 0.02 | 0.04 | 0.04 | 0.80 | 0.88 | 0.75 | 0.86 | 0.95 | 1.00 | |
| <i>LEVG.</i> | -0.09 | -0.12 | -0.07 | -0.16 | -0.08 | -0.14 | 0.04 | 0.08 | -0.05 | 1.00 |

Table 4. Descriptive statistics of variables

| | $P_{(t+3)}$ | <i>EPS</i> | <i>BVPS</i> | <i>MCAP</i> | <i>PAT</i> | <i>EBIT</i> | <i>EQUITY</i> | <i>TA</i> | <i>SALES</i> |
|-------------|-------------|------------|-------------|-------------|------------|-------------|---------------|-----------|--------------|
| Mean | 619.85 | 28.47 | 231.49 | 197917.30 | 8618.72 | 18045.74 | 81988.26 | 220887.00 | 136203.00 |
| Median | 168.75 | 9.49 | 100.30 | 39789.04 | 1911.90 | 4846.40 | 22570.00 | 61827.20 | 39096.20 |
| Skewness | 15.97 | 17.11 | 18.54 | 7.05 | 4.48 | 5.57 | 8.03 | 7.58 | 7.53 |
| Kurtosis | 306.40 | 332.77 | 382.04 | 71.63 | 46.37 | 51.09 | 90.25 | 84.25 | 75.02 |
| Jarque-Bera | 7697981.00 | 9091146.00 | 11996274.00 | 406058.30 | 162216.00 | 201568.60 | 650866.80 | 565038.20 | 447818.60 |
| Probability | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Notes: Table 4 provides the descriptive statistics of variables for the complete panel of 1985 observations. The Jarque-Bera statistic and its corresponding p-value reject the null hypothesis normality of the distributions. The mean, median, maximum and minimum values for *MCAP*, *SALES*, *PAT*, *EBIT*, *TA*, and *EQUITY* are in Indian rupee billions. For $P_{(t+3)}$, *BVPS* and *EPS* they are in Indian rupees.

Although Ind AS was mandated only for the largest companies in Phase 1 of its rollout (the sample for this study), the non-normality and skewness of our sample towards very large companies (Table 4) can lead to biased results. High positive skewness and kurtosis in all the series of our data indicate the presence of very large companies whose metrics are significantly higher than for the median firms that makes the mean value non-representative of the entire distribution. Converting the variables into their natural logarithms has been seen to overcome these problems (Mulenga & Bhatia, 2000b). However, in our sample, except for *MCAP*, the issue of heteroscedasticity and non-normality continues to persist. In such situations, quantile regressions not only solve these problems by computing deviations around the median value of the selected quantile rather than the mean (Hao & Naiman, 2007), they also provide more nuanced insights, especially at the group level.

5. RESULTS AND DISCUSSION

Tables 5, 6, and 7 provide the results of the PLS as well as quantile regressions for our three base models as per equation (1), equation (2), and equation (3), respectively. For each quantile, in addition to the results of these equations (columns (1)), results have been provided

(columns (2)) by splitting the dummy variable *POST* into D1 (transition period) and D2 (stabilization period). As losses have been found to reduce VR (Hayn, 1995; Goodwin, Ahmed, & Heaney, 2008), all models are run only with observations with non-negative earnings.

The quantile regression results in the three tables show that earnings have been the dominant and statistically significant metric in explaining variation in market values and returns in the pre-Ind AS period and, as expected, share a positive association. Tables 5 and 7 show that while equity has also been a significant influencer for most cases, it has lagged behind earnings in both magnitude and statistical significance. These results are similar to Rodríguez García et al. (2017) for Latin American countries, who interpret it as a short-term outlook of investors in placing greater relevance on metrics like current earnings over the longer-term equity. The PLS regressions in these two tables though show a greater influence of equity for market valuation. The extremely high R-squared values for the PLS regressions, combined with the high significance levels for most variables could indicate biased parameters on account of asymmetric data. This problem is especially severe for the level models in Tables 5 and 7. The PLS results for the return model in Table 6 are much in line with those of the quantile regressions.

Table 5. Panel least squares (PLS) and quantile regressions on the price model

| Quantile | Dependent variable: $P_{(t+3)}$; Sample: 1624 after removing loss-making observations | | | | | | | |
|--------------------|--|------------|--------|------------|---------|---------|----------|----------|
| | PLS (FE) | | 25th | | Median | | 75th | |
| | (1) | (2) | (1) | (2) | (1) | (2) | (1) | (2) |
| C | -370.93*** | -252.59*** | 23.03 | 23.03 | 16.27 | 16.27 | 23.61*** | 23.61*** |
| EPS | 1.83* | 2.32** | 3.89** | 3.89** | 8.18*** | 8.18*** | 12.26*** | 12.26*** |
| BVPS | 3.74*** | 3.11*** | 0.09 | 0.09 | 0.44* | 0.44* | 1.09*** | 1.09*** |
| POST | 325.58*** | | -19.2 | | -18.49 | | 98.91 | |
| POST * EPS | 1.35 | | 1.71 | | 7.97*** | | 6.81 | |
| POST * BVPS | -0.86*** | | 0.54 | | 0.14 | | -0.64 | |
| D1 | | 146.12** | | 9.81 | | -6.93 | | 86.78** |
| D2 | | 127.29** | | -164.28*** | | -11.26 | | 60.54 |
| D1 * EPS | | -9.94*** | | 3.80* | | 5.23 | | 3.09 |
| D1 * BVPS | | 1.61*** | | 0.05 | | 0.3 | | -0.38 |
| D2 * EPS | | 18.80*** | | 3.78 | | 7.58** | | 6.47 |
| D2 * BVPS | | -3.07*** | | 0.95 | | -0.69* | | -0.61 |
| Pseudo R-squared | NA | NA | 0.23 | 0.26 | 0.41 | 0.42 | 0.57 | 0.58 |
| Adjusted R-squared | 0.92 | 0.94 | 0.23 | 0.26 | 0.41 | 0.42 | 0.57 | 0.57 |

Notes: $P_{(t+3)}$ is the per-share price of the firm three months after fiscal year-end; $P_{(t+3)}/P_{(t-12)}$ is the holding period return over the financial year plus three months; EPS is the earnings per share for the fiscal year; BVPS is the book value per share for the fiscal year; POST is the dummy for the post-Ind AS period from the fiscal year 2016 onwards; D1 is the dummy for the "transition period" — the fiscal years 2016 and 2017. D2 is the dummy for the "stabilization period" — the fiscal years 2018 and 2019.

*, **, *** indicate statistical significance at the 10%, 5%, 1% level, respectively.

Table 6. Panel least squares (PLS) and quantile regressions on the return model

| Quantile | Dependent variable: $P_{(t+3)}/P_{(t-12)}$; Sample: 1624 after removing loss making observations | | | | | | | |
|-----------------------------------|---|----------|---------|----------|----------|----------|----------|----------|
| | PLS (FE) | | 25th | | Median | | 75th | |
| | (1) | (2) | (1) | (2) | (1) | (2) | (1) | (2) |
| C | 1.38*** | 1.38*** | 0.91*** | 0.91*** | 1.24*** | 1.24*** | 1.70*** | 1.70*** |
| EPS/ $P_{(t-12)}$ | 0.83*** | 0.84*** | 0.33*** | 0.33*** | 0.43*** | 0.43*** | 0.91*** | 0.91*** |
| Δ EPS/ $P_{(t-12)}$ | -0.27** | -0.27** | -0.03 | -0.03 | 0.0 | 0.0 | -0.04 | -0.04 |
| POST | -0.31*** | | -0.10** | | -0.20*** | | -0.40*** | |
| POST * EPS/ $P_{(t-12)}$ | 0.72*** | | 0.16 | | 0.25 | | 0.66 | |
| POST * Δ EPS/ $P_{(t-12)}$ | 0.51** | | 0.07 | | -0.02 | | 0.17 | |
| D1 | | -0.22*** | | 0.04 | | -0.09 | | -0.33*** |
| D2 | | -0.16*** | | -0.19*** | | -0.17*** | | -0.16* |
| D1 * EPS/ $P_{(t-12)}$ | | 1.19*** | | 0.21 | | 0.66 | | 1.88 |
| D1 * Δ EPS/ $P_{(t-12)}$ | | 0.24 | | 0.16 | | 0.65 | | 0.50 |
| D2 * EPS/ $P_{(t-12)}$ | | -1.79*** | | -0.68* | | -1.51* | | -3.04** |
| D2 * Δ EPS/ $P_{(t-12)}$ | | 0.28 | | -0.15 | | -0.77* | | -0.36 |
| Pseudo R-squared | NA | NA | 0.02 | 0.04 | 0.04 | 0.07 | 0.08 | 0.11 |
| Adjusted R-squared | 0.10 | 0.13 | 0.02 | 0.04 | 0.04 | 0.06 | 0.07 | 0.11 |

Notes: $P_{(t+3)}/P_{(t-12)}$ is the holding period return on a share over the financial year plus three months; EPS/ $P_{(t-12)}$ is the EPS at the end of the year scaled by the share price at the beginning of the year; BVPS/ $P_{(t-12)}$ is book value per share scaled by the share price at the beginning of the year; POST is the dummy for the post-Ind AS period from the fiscal year 2016 onwards; D1 is the dummy for the "transition period" — the fiscal years 2016 and 2017. D2 is the dummy for the "stabilization period" — the fiscal years 2018 and 2019.

*, **, *** indicate statistical significance at the 10%, 5%, 1% level, respectively.

Table 7. Panel least squares (PLS) and quantile regressions on the m-cap model

| Quantile | Dependent variable: $MCAP/TA_{(t-12)}$; Sample: 1864 after removing loss-making observations | | | | | | | |
|------------------------------|---|----------|----------|----------|----------|----------|----------|----------|
| | PLS (FE) | | 25th | | Median | | 75th | |
| | (1) | (2) | (1) | (2) | (1) | (2) | (1) | (2) |
| C | 0.58*** | 0.55*** | -0.39*** | -0.39*** | -0.67*** | -0.67*** | -0.76*** | -0.76*** |
| EBIT/ $TA_{(t-12)}$ | 0.69* | 0.99* | 5.13*** | 5.13*** | 9.44*** | 9.44*** | 15.03*** | 15.03*** |
| EQUITY/ $TA_{(t-12)}$ | 1.42*** | 1.3*** | 0.65*** | 0.65*** | 1.16*** | 1.16*** | 1.39*** | 1.39*** |
| POST | 0.16* | | -0.05 | | -0.02 | | 0.1 | |
| POST * EBIT/ $TA_{(t-12)}$ | 1.67*** | | 1.37 | | 1.15 | | 1.81 | |
| POST * EQUITY/ $TA_{(t-12)}$ | -0.09 | | 0.27 | | 0.36 | | 0.27 | |
| D1 | | 0.05 | | -0.37*** | | -0.03 | | 0.04 |
| D2 | | 0.18 | | 0.52*** | | 0.03 | | 0.13 |
| D1 * EBIT/ $TA_{(t-12)}$ | | 3.17*** | | 4.75*** | | 3.29** | | 2.57 |
| D1 * EQUITY/ $TA_{(t-12)}$ | | -0.24 | | 0.42** | | -0.08 | | 0.25 |
| D2 * EBIT/ $TA_{(t-12)}$ | | -2.26*** | | -6.71*** | | -4.69* | | -2.5 |
| D2 * EQUITY/ $TA_{(t-12)}$ | | 0.26 | | -0.05 | | 0.99** | | 0.23 |
| Pseudo R-squared | NA | NA | 0.17 | 0.19 | 0.3 | 0.3 | 0.4 | 0.4 |
| Adjusted R-squared | 0.86 | 0.86 | 0.17 | 0.18 | 0.3 | 0.3 | 0.4 | 0.4 |

Notes: $MCAP/TA_{(t-12)}$ is the market capitalization of the firm at the end of the fiscal year deflated by total assets at the beginning of the year; EBIT/ $TA_{(t-12)}$ is operating profits for the year deflated by total assets at the beginning of the year; EBIT/ $TA_{(t-12)}$ is deflated net worth of the firm at the end of the year; POST is the dummy for the post-Ind AS period from the fiscal year 2016 onwards; D1 is the dummy for the "transition period" — the fiscal years 2016 and 2017. D2 is the dummy for the "stabilization period" — the fiscal years 2018 and 2019.

*, **, *** indicate statistical significance at the 10%, 5%, 1% level, respectively.

All the specifications of the price model in Table 5 show an increase for VR of earnings in the post-Ind AS period (positive coefficient for $POST * EPS$). This is statistically significant only for the median firms and occurs specifically in the stabilization period as seen in the second regression for the median firms. The 25th quantile firms see an increase in VR, though lesser in degree and significance, in the transition period. Incremental VR of earnings shows a statistically significant decrease against return per share for all groups of firms in the stabilization period (Table 6), nullifying any increase it may have seen in the transition period. These results concur with the meta-analysis results of Ahmed et al. (2013) that return models have found reduced VR of earnings post-IFRS implementation while price models have found the reverse. All models are fixed effects estimations basis the Hausman test.

The results of the m-cap model (Table 7) show an increase in VR of operating earnings in explaining scaled market capitalization in the transition period but an equal or greater reduction in VR in the stabilization period. These effects are, however, statistically significant only for the 25th quantile firms and slightly less so for the median firms. They are not significant for the largest group of firms. Essentially, an increase in VR of earnings in $D1$ is erased in $D2$, which is also evident in the insignificant coefficients of the interaction term

$POST$ with the earnings variable for all quantiles. Nevertheless, the results indicate the sensitivity of market capitalization to earnings and equity variables for the two smaller groups of firms.

Incremental VR of equity is statistically insignificant for most cases in both the price (Table 5) and m-cap models (Table 7). It shows an increase that is statistically significant, only in explaining scaled market capitalization (Table 7) for the 25th and the median group of firms in periods $D1$ and $D2$, respectively. Across the three models, we conclude that incremental shift in VR of earnings has been marginal at best, that too for the smaller firms. For the largest firms, it has not changed significantly. However, the pseudo R-squared and the adjusted R-squared of all the models indicate that accounting numbers are able to explain variation in market values and returns more for the larger than smaller firms.

There is evidence that market value is affected by other factors as well such as leverage (Iatridis, 2010) and growth (Khan & Watts, 2009). A variation of the m-cap model is tested by controlling for $SIZE$ (log of total assets), $EFFICIENCY$ (ratio of sales to total assets at the end of the year), $GROWTH$ (difference in log of sales between the current and previous years), and $RISK$ (difference in log of total liabilities between the current and previous years), as in Rodríguez García et al. (2017).

Table 8. Panel least squares (PLS) and quantile regressions on the m-cap model with controls

| Quantile | Dependent variable: $MCAP/TA_{(t-12)}$; Sample: 1864 after removing loss-making observations | | | | | | | |
|-----------------------------|---|----------|----------|----------|----------|----------|----------|----------|
| | PLS (FE) | | 25th | | Median | | 75th | |
| | (1) | (2) | (1) | (2) | (1) | (2) | (1) | (2) |
| C | 1.6 | 1.83 | -0.94*** | -1.00*** | -1.15*** | -1.04*** | -0.94*** | -1.01** |
| $EBIT/TA_{(t-12)}$ | 0.54 | 0.87** | 4.28*** | 4.28*** | 9.35*** | 9.10*** | 4.28*** | 13.17*** |
| $EQUITY/TA_{(t-12)}$ | 1.26*** | 1.22*** | 0.97*** | 0.96*** | 1.28*** | 1.28*** | 0.97*** | 1.51*** |
| $GROWTH$ | 0.17 | 0.11 | -0.2 | -0.17 | -0.36 | -0.28 | -0.2 | -0.29 |
| $RISK$ | 0.52** | 0.56** | -0.27 | -0.21 | -0.25 | -0.18 | -0.27 | 0.07 |
| $SIZE$ | -0.1 | -0.11 | 0.04*** | 0.04*** | 0.03 | 0.02 | 0.04*** | 0 |
| $EFFICIENCY$ | 0.12 | 0.07 | 0.13*** | 0.14*** | 0.20*** | 0.20*** | 0.13*** | 0.53*** |
| $POST$ | 0.18** | | -0.01 | | 0.01 | | -0.01 | |
| $POST * PBIT/TA_{(t-12)}$ | 1.80*** | | 1.49 | | 1.07 | | 1.49 | |
| $POST * EQUITY/TA_{(t-12)}$ | -0.07 | | 0.14 | | 0.27 | | 0.14 | |
| $D1$ | | 0.06 | | -0.33** | | -0.01 | | 0.14 |
| $D2$ | | 0.19* | | 0.49*** | | 0.08 | | -0.04 |
| $D1 * PBIT/TA_{(t-12)}$ | | 3.29*** | | 5.10*** | | 3.19 | | 3.15 |
| $D1 * EQUITY/TA_{(t-12)}$ | | -0.22 | | 0.27 | | -0.11 | | -0.08 |
| $D2 * PBIT/TA_{(t-12)}$ | | -2.24*** | | -6.40*** | | -4.09 | | -2.62 |
| $D2 * EQUITY/TA_{(t-12)}$ | | 0.25 | | -0.08 | | 0.7 | | 0.67 |
| Pseudo R-squared | NA | NA | 0.18 | 0.19 | 0.31 | 0.31 | 0.18 | 0.42 |
| Adjusted R-squared | 0.86 | 0.86 | 0.18 | 0.19 | 0.3 | 0.31 | 0.18 | 0.41 |

Notes: $MCAP/TA_{(t-12)}$ is the market capitalization of the firm at the end of the fiscal year deflated by total assets at the beginning of the year; $EBIT/TA_{(t-12)}$ is operating profits for the year deflated by total assets at the beginning of the year; $EQUITY/TA_{(t-12)}$ is deflated net worth of the firm at the end of the year; $GROWTH$ is defined as the difference in log of sales between the current and previous years; $SIZE$ is the natural log of total assets; $EFFICIENCY$ is the ratio of sales for the year to its total assets at the end of the year, and $RISK$ is defined as the difference in the log of total liabilities between the current and previous year; $POST$ is the dummy for the post-Ind AS period from the fiscal year 2016 onwards; $D1$ is the dummy for the "transition period" — the fiscal years 2016 and 2017. $D2$ is the dummy for the "stabilization period" — the fiscal years 2018 and 2019.
*, **, *** indicate statistical significance at the 10%, 5%, 1% level, respectively.

Besides slightly improving the explanatory power of the relationship as evident from the pseudo and adjusted R-squared, the expanded model reconfirms our conclusions on incremental VR from Table 7. Additional insights are drawn on the control variables. $SIZE$ is a small positive but statistically significant for the 25th percentile firms. Rodríguez García et al. (2017) interpret this to be consistent with Roll (1983) that transaction costs

and economies of scale in negotiations weigh down on smaller firms thus, holding down their market capitalization. $EFFICIENCY$ comes up as statistically significant for all groups of firms and shows a greater positive association with firms having higher market capitalization. We do not place much reliance on the PLS results on account of the issues cited earlier. Besides, multicollinearity as indicated by the variance inflation factor (we use a cut-off

of 10) for some of the variables, especially in Table 5 and for the interaction variables in Table 8, make the PLS estimations unreliable.

The quantile regression results in Tables 5, 6, 7, and 8 make for the following insights. Firstly, the market seems to place greater importance on earnings than on the book value of equity. Secondly, the benefits that a regime shift to Ind AS (or IFRS) expected to bring have been likely absorbed over time during the convergence period since the early 2000s. Hence, incremental benefit at the time of implementation, i.e., when financial reporting shifts from the local standard to the IFRS-converged standard, has been marginal at best. These results support our hypotheses *H1* and *H2*.

We reconfirmed our inference by running all three models separately for the pre- and post-Ind AS periods for each of the quantiles (not shown here). Larger incremental change in VR for the smaller group of firms than the larger ones across models might seem in contrast to Goodwin and Ahmed's (2006) findings that IFRS has a greater impact on larger firms. However, we interpret our results to mean that larger firms have factored in the benefits of IFRS convergence over the years (Kumari & Mishra, 2018) and any incremental benefit at this stage is relatively insignificant. The fact that their reporting accounting numbers hold greater explanatory power supports this argument.

The positive fallouts of institutional reforms preceding and in concurrence with convergence are clear in our results. Further studies using longer periods and a cross-section of post-adoption data are required to conclude with greater certainty whether and how long the benefits of IFRS might continue in a convergence scenario as also whether this indicates a plateauing of incremental benefits from IFRS convergence or is a temporary blip. This is possible as more companies come under the ambit of Ind AS.

6. CONCLUSION

In this study, we examine the VR of financial reporting resulting from the mandatory adoption of Ind AS — a modified form of IFRS — in India that have converged with the IFRS over time. The contributions of this study are relevant as it adds to the sparse literature on the impact of the IFRS adoption through the convergence route. Secondly, it is the first study in the Indian context since Ind AS was mandated to be adopted by the first set of firms from the financial years 2016–2017. Ghosh (2019), the only study on Ind AS after its implementation, limits itself to testing whether the differences in earnings and book value of equity under the two regimes — IGAAP and Ind AS — were significant, and if the change in equity between the two regimes was affected by the size of the net worth of the firms in the year of transition.

This study uses a seven-year period split into the pre-Ind AS adoption (2013, 2014, and 2015) and the post-Ind AS adoption period which is further split into the transition (2016 and 2017) and stabilization (2018 and 2019) periods. We use three models to test incremental VR. These are the two variations of Ohlson's price model — the level price and the return models — and the m-cap model.

We use quantile regression models for econometrically unbiased results and additional group-level insights. Our results show both earnings and book value of equity to be statistically significant determinants — earnings more so — of firm value in the pre-Ind AS period. As hypothesized, the incremental VR after the implementation of Ind AS reporting is at best marginal. The few instances of significant change in VR during the transition and stabilization periods occur in the smallest group of firms though in such cases too, an increase in one period is negated by a decrease in the other. From the insignificant change in VR for the larger firms, we infer that the market has better factored in the benefits of the regime shift in the case of the larger firms over the convergence period. The model fit improvement also validates this argument.

The results of this study, taken along with those of Kumari and Mishra (2018), conclude a steady increase in VR of especially earnings over the period of institutional reforms, convergence, and mandatory adoption. The convergence mode of adoption pre-empts a shock effect of mandatory adoption of the new accounting regime, which perhaps reflects in fluctuation in magnitude and/or statistical significance in the periods immediately after implementation. Future studies taking longer time periods and greater cross-sectional data are required to conclude the time over which such value relevance effect might be visible.

India being the fifth largest economy in the world and the second largest among the emerging markets, the authors intend this study to be seen from an emerging markets' perspective. Extensive research has been carried out on the impact of the IFRS adoption both in the developed and emerging markets but studies in the convergence context are few. This study on India's adoption of IFRS-converged standards offers insights for such contexts where new accounting standards are converged with the existing ones over time or are tailored to local conditions. As a late adapter, India has benefitted from improved legal, cultural, institutional, and regulatory systems thus, giving further credence to past findings that reporting quality is not determined by the quality of standards alone but also by the maturity of the country's institutional and regulatory set-up. The convergence route, combined with phased mandatory adoption engendered changes in firms' disclosure of accounting information in an informed way with adequate training and inputs from professional accounting firms. It accelerated the pace of legal, tax, regulatory and capital market reforms and improved the overall attractiveness of India as a destination for foreign investment. Thus, to achieve IASB's desired objective of a single high-quality accounting standard, convergence may be the answer. While it may fall short of achieving perfect comparability of financial reports, it may lead to more evolved and meaningful reporting that better reflects the economics of the business and hence, assists better decision-making. This resonates with Sunder (2011) who while arguing for multiple accounting standard regimes, contends that an IFRS monopoly that disallows changes to suit an individual country's needs is not ideal and that competition could lead to better regimes. We take

this argument further to say that variations in a single regime should be encouraged so long as the principal quality parameters of relevance and faithful representation are achieved.

The USA and Japan are two large economies that have still not embraced the IFRS. Whitehouse (2011) quotes Paul Beswick, the SEC's Deputy Chief Accountant at the 2010 AICPA National Conference where he referred to India's convergence route to IFRS and said that if the USA were to move to IFRS, he would call it the "condorsement approach" — convergence and endorsement — a likely endorsement of India's approach.

One of the limitations of this study is that it includes only two full accounting periods after the first set of Indian companies adopted Ind AS. The results hence will need reconfirmation using a larger set of firms as well as time periods as more firms adopt Ind AS reporting. This study does not explicitly look at the implications of changes such as the mandatory contribution to corporate social responsibility (CSR) introduced by the Companies

Act of 2013 on the earnings of companies. Structural breaks like the currency demonetization in November 2016 and the COVID-19 pandemic, which brought economic activities to a standstill in most countries including India, make it difficult to have a continuous series of data that can be tested for reliable conclusions. Future studies with larger coverage, micro analysis of differences in the IFRS and the converged standard, use of alternative models, use of more accounting information besides earnings and book value of equity should be better placed to conclude about the benefits of adoption versus convergence with IFRS. Barth et al. (2021) have employed a non-parametric technique of Classification and Regression Trees (CART) in order to avoid requiring a prior specification of the relationships between the variables. Such studies are essential for policy decisions around mandating or guiding international standards as well as customizing them to any country's peculiar needs, incentives and dynamics.

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APPENDIX A. TIMELINE OF EVENTS LEADING UP TO IFRS CONVERGENCE IN INDIA

| Year | Events |
|------|---|
| 2001 | An initiative of harmonization of Indian Accounting Standards (IAS) with the IFRS taken up by the National Advisory Committee on Accounting Standards (NACAS), constituted by the Government of India (GOI), the Ministry of Corporate Affairs (MCA) in 2001 ² . |
| 2005 | Subsequent to mandatory IFRS adoption by the EU in 2005 and European Securities Market Agency (ESMA)'s communication with MCA and the Institute of Chartered Accountants of India (ICAI) to assess Indian accounting standards, the Accounting Standards Board of India (ASB) submits 28 IFRS-converged accounting standards to NACAS for review and official ratification. |
| 2006 | The GOI notifies 28 IFRS-converged accounting standards. |
| 2007 | India makes a formal proposal of convergence by 2011. |
| 2008 | The MCA officially announces the April 2011 deadline for IFRS convergence, the NACAS approves roadmap for convergence submitted by the ICAI. A number of IFRS training sessions are conducted across the country; the first official deadline of 2011 was announced by MCA. |
| 2009 | The MCA constitutes a high-powered group in August to discuss and resolve challenges to IFRS convergence. Two sub-groups are formed. One to identify the regulatory and legal amendments/reforms that IFRS convergence would require and the other to assess the level of preparedness of industry to adopt the new standards. In the G-20 Summit held in September, India's Finance Minister reiterates commitment to the 2011 deadline. |
| 2010 | The Central Board of Direct Taxes (CBDT) sets up an Accounting Standards Committee (ASC) in December to study the harmonization of the accounting standards issued by the ICAI with Direct Tax Laws and to suggest appropriate amendments to the Income Tax Act in view of the transition to Ind AS ³ . The committee submits its report in 2012 recommending tax accounting standards to be issued for 14 of 31 accounting standards. |
| 2011 | In February, the MCA officially publishes 35 IFRS-converged accounting standards without notifying an adoption date pending tax issues; April 2011 deadline is not met and subsequently, a new deadline of April 2013 is announced. |
| 2012 | New roadmap for convergence submitted by the ICAI to the MCA. |
| 2013 | The 2013 deadline is also missed. The core group meets and recommends implementation of Ind AS in phases starting from April 1st, 2016; Companies Act of 1956 is amended, and Ind AS notified by the MCA is included in the Act. |
| 2014 | Though revised dates were not notified by the MCA, Finance Minister proposes mandatory Ind AS adoption in 2016-2017 during a budget speech in July 2014. |
| 2015 | The MCA officially publishes a new deadline of April 2016 and also notifies 39 standards under Ind AS; the Ministry of Finance officially publishes a new framework for the calculation of taxable income; the issue of calculation of Minimum Alternate Tax (MAT) on accounting profit is still unresolved. |

Sources: Krishnan (2016).

APPENDIX B. SUMMARY OF REFORMS AND MEASURES ON THE TAX, LEGAL AND REGULATORY FRONTS

| Tax/Legal/Regulatory issue to be addressed | Measures taken to address the issues |
|--|---|
| 1. Tax related: Calculations of taxable profit, Minimum Alternate Tax (MAT) on accounting profit after transitioning to Ind AS. | The CBDT constituted a Committee to suggest an implementable framework that submitted its recommendations in April and August 2016. The Finance Bill 2017, passed in March 2017, included these recommendations. |
| 2. Legal: Amendments to the Companies Act to remove discrepancies between the Act and Ind AS. For instance, Sections 391-394 allowed courts to approve schemes of amalgamation and merger and as part of their approval, to define the accounting treatment. Section 78 permitted companies to use securities premium accounts to charge off certain security issue expenses; as per Ind AS, such expenses are to be charged to the income statement. | The Companies Act of 1956 was amended to the Companies Act of 2013. It was passed in the Parliament in August 2013 and was given effect in September 2013. |
| 3. Multiple industry regulators to address conflicts between Ind AS and industry-specific financial reporting regulations | a. A working group constituted by the Reserve Bank of India (RBI), the central bank and the banking regulator for banks in India, issued its report on the implementation of Ind AS by banks on July 1st, 2015. Proforma of Ind AS financial statements for banks were notified by the RBI vide its circulars dated February 11th, 2016 and June 23rd, 2016. b. An implementation group constituted by the Insurance and Regulatory Development Authority of India (IRDAI), the insurance regulator, submitted its report on December 30th, 2016 based on which the IRDAI notified an exposure draft on new regulations for preparation of financial statements. In May 2017 the IFRS issued IFRS 17 (Insurance Contracts) replacing IFRS 4. As Ind AS had no standard for asset valuation as per the fair value approach, Ind AS implementation for the insurance sector has been deferred. c. The ICAI issued guidance notes on accounting issues relating to revenue recognition. Guidance Note dated May 10th, 2016 pertains to Ind AS compliant real estate companies. |
| 4. Stock market regulations: The stock market regulator in India, the SEBI issued various guidelines for reporting by listed companies. | Revised format for submission of financial results by Ind AS compliant companies was notified vide SEBI circular dated July 5th, 2016. The SEBI was earlier permitting listed companies to report consolidated results under IFRS; henceforth, they are permitted only as per Ind AS. |
| 5. Guidance on reporting: Existing guidelines on financial reporting required amendments and revised proforma statements to comply with Ind AS disclosures. | The MCA amended Schedule III to provide guidance and format for the preparation of financial statements by companies required to comply with Ind AS (MCA notification dated July 4th, 2016). |
| 6. Prospective changes in the IFRS after Ind AS standards notification: The ICAI and MCA have managed significant changes expected in the IFRS (e.g., revenue recognition, financial instruments, leases, insurance contracts, and consolidation) after respective Ind AS notifications dynamically. | Ind AS's notified in 2015 included Ind AS 115 — the converged IFRS 15 standard. Following the deferral of IFRS 15 to January 1st, 2018, the MCA deferred Ind AS 115 too and issued Ind AS 11 (construction contract) and Ind AS 18 (revenue recognition). On March 28th, 2018, the MCA notified Ind AS 115, to replace existing Ind AS 11 and Ind AS 18, to be implemented by companies with effect from April 1st, 2018 ⁴ . Consequent to amendments to IFRS standards on share-based payment and statement of cash flows, revised Ind AS on the above standards were notified on March 21st, 2017, to come into force from April 1st, 2017. |

Source: KPMG (2011) and PwC (2017).

² http://www.mca.gov.in/Ministry/pdf/Accounting_Standards.pdf

³ <https://incometaxindia.gov.in/Communications/Circular/91011000000000445.htm>

⁴ <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/tax/in-tax-white-paper-on-IND-AS-115-noexp.pdf>